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CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

GENERAL STATISTICS BRANCH

NATIONAL INCOME

OF CANADA

1919 - 1938

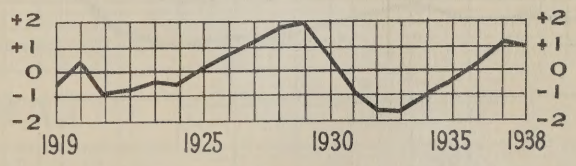
PART 1

OTTAWA
1941

Price 50 cents

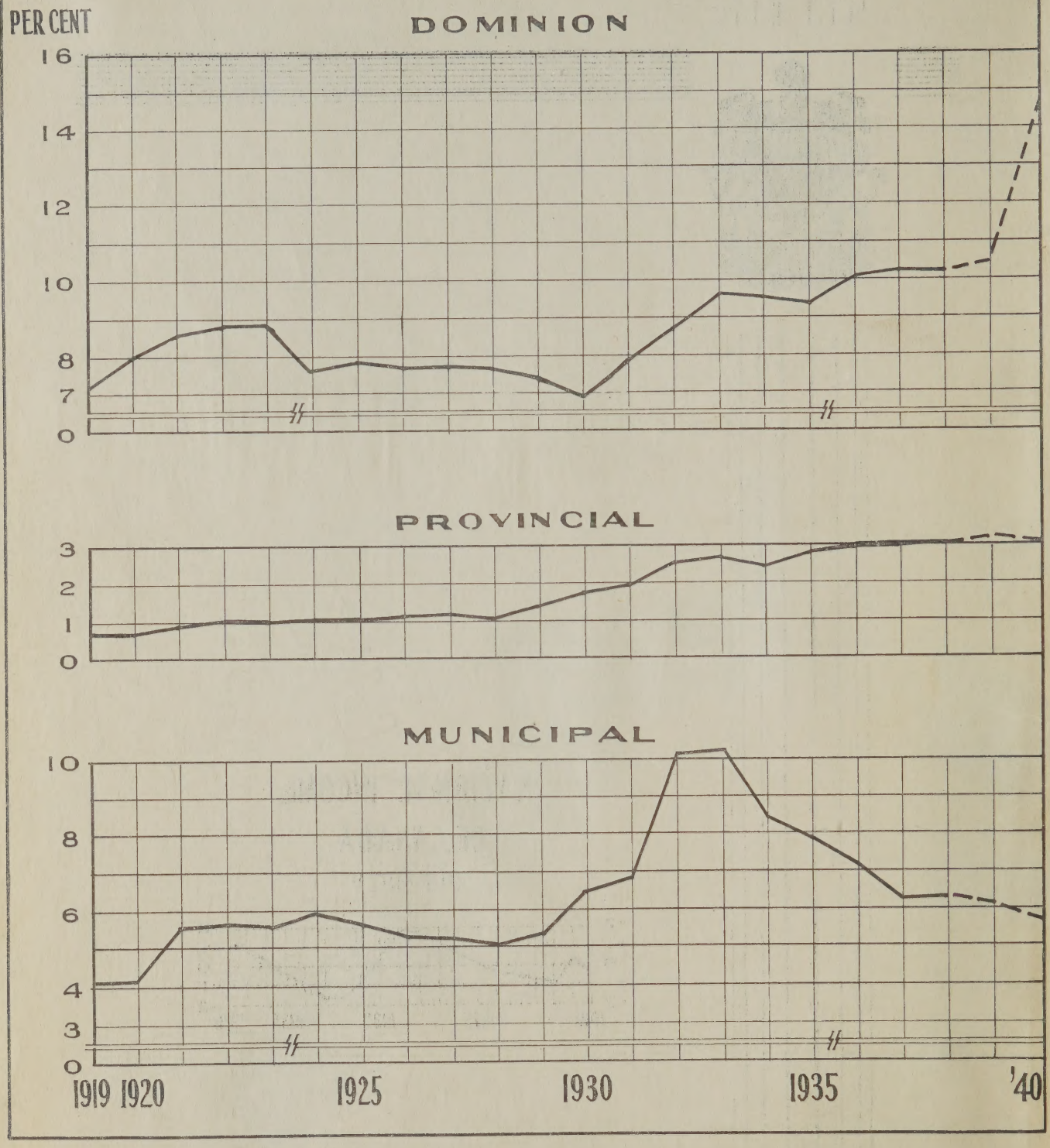
NATIONAL INCOME OF CANADA

1919-1938



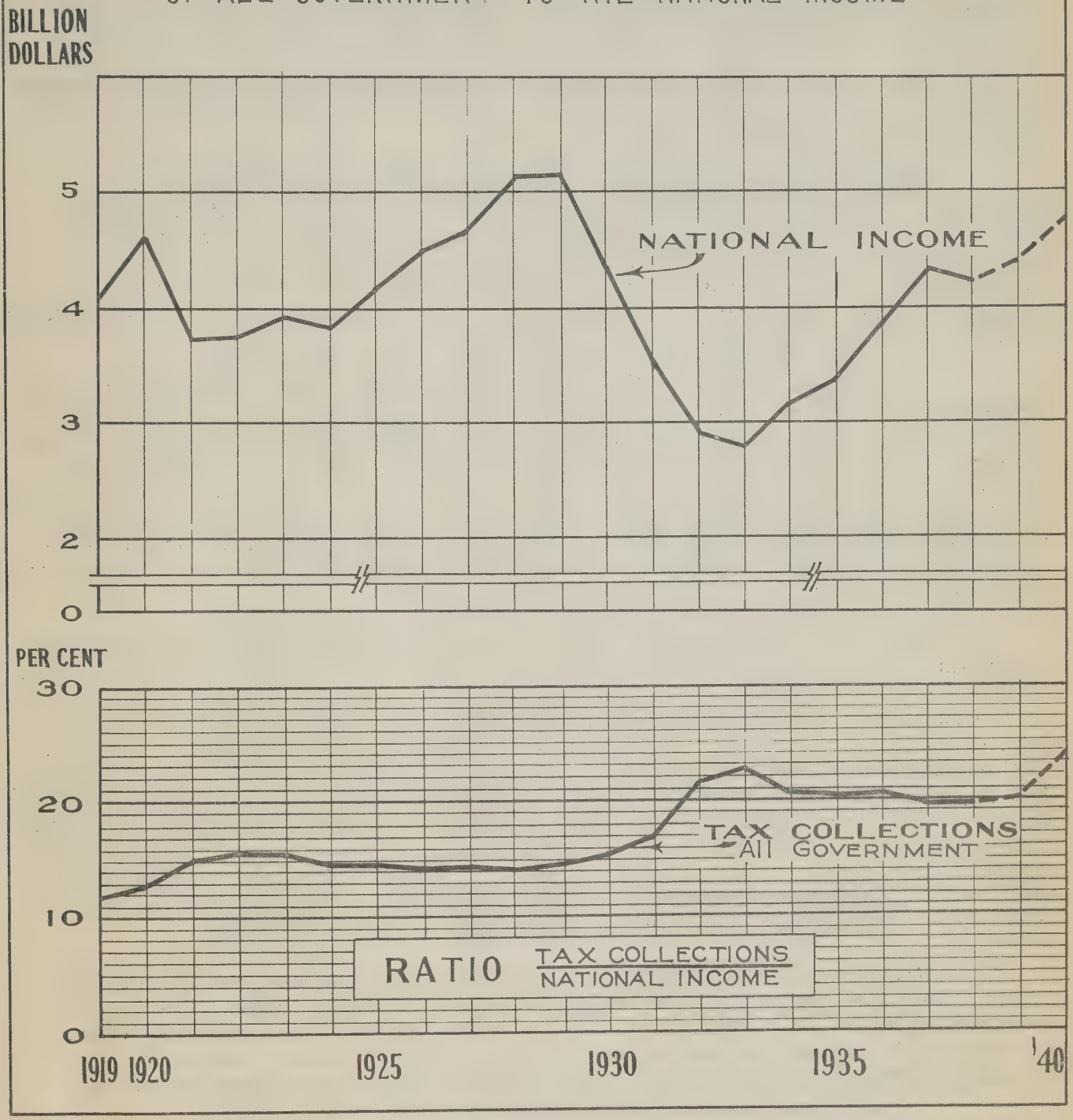
NATIONAL INCOME OF CANADA 1919-1940

RATIO OF TAX COLLECTIONS BY GOVERNMENTS TO THE NATIONAL INCOME



NATIONAL INCOME OF CANADA 1919-1940

NATIONAL INCOME AND THE RATIO OF TAX COLLECTIONS OF ALL GOVERNMENT TO THE NATIONAL INCOME



PREFACE

An estimate of Canada's national income has many important uses. As the best measure of economic activity in a country, it is valuable as illustrating long-term progress and cyclical fluctuations. By adjusting for price changes, the volume of goods and services provided by the economic system is recorded from year to year. National income also provides a gauge of public debt, taxation, external and internal trade, comparative standards of living and other factors.

The distribution of the national income by industrial and service groups, by income classes and by provincial origin presents interesting sidelights on the functioning of the economic system.

Most economic propositions are concerned with the national income - especially as to whether particular measures will have a beneficial or adverse effect. The underlying thesis of Pigou's "Economics of Welfare" is that the economist must discover methods which will: (1) increase the national income; (2) regulate its flow through time; (3) promote a more equitable distribution between persons. Obviously a prerequisite is a definite measurement of the national income and its distribution.

The Bureau has profited much by the work done in this difficult field by predecessors in Canada, Great Britain, the United States and other countries. Research workers of the present should be able to improve upon the estimates of forerunners, and it is hoped that the results presented in this report constitute an advance beyond earlier Canadian work. But at best many of the totals are estimates based upon such data as are available. The tables in this report, therefore, are not regarded as final, but as subject to revision as new data become available and better analytic methods are devised. In this process the criticism and co-operation of all interested in the subject are cordially invited.

The period under consideration, namely 1919-1938, inclusive, practically corresponds with the first twenty years of the existence of the Bureau, as well as with the inter-war period. For that period a vast amount of information, collected by the Bureau and not previously available in Canada has been laid under contribution, so that the present publication and those which are to follow it in this series summarize the economic life of the nation during these two decades, covering the immediate post-war boom, the primary depression of 1921, the prosperous 'twenties, the secondary depression of the early 'thirties, the recovery of 1933-1937 and the minor decline of 1938. The foundations for the continuance of the study of the national income in future years have thus been broadly laid, and it is hoped that publications dealing with subsequent years will gain as the result of accumulated experience and increasing availability of data.

The report, of which this is the first Part, was prepared by Sydney B. Smith, M.A., assisted by R. A. Brown, M.A., and R. G. Bangs, B.Sc. The charts were traced by Mr. J. W. Delisle. Other parts dealing with the operating accounts of industrial and service groups, geographical distribution by industries, and capital formation and consumers' outlay, will be issued as opportunity permits.

R. H. Coats

Dominion Statistician.

NATIONAL INCOME

ACTUAL IN PRICES OF 1926

Each symbol represents 500 million dollars

ACKNOWLEDGMENTS

The present computation of the national income of Canada was possible only through the co-operation of a large number of persons engaged in statistical work. Contributions of serious students in many quarters were appraised, compared and utilized. The appeal for information and advice met with a ready response, and whatever success has attended the project was mainly due to the willingness with which the basic data were made available. The list of contributors is too lengthy to repeat in full and the following is a partial list of those giving important help on specific problems:

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CONSTRUCTION - F.I. Tanner, Chief, Construction Branch, Dominion Bureau of Statistics.

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BANKING - A.W. Rogers, Secretary, The Canadian Bankers Association. Messrs. A. Skelton, B.A., and J.J. Deutsch, B.Com., of the Research Department of the Bank of Canada.

INSURANCE - The Canadian Life Insurance Officers' Association.

REAL ESTATE - Agricultural Branch, Dominion Bureau of Statistics. Assessment Commissioner, City of Hamilton, Assessment Commissioner, City of Ottawa. Assessment Commissioner, City of Windsor. Assessment Commissioner, City of Winnipeg. Assessment Department, City of Toronto. Assessor and Tax Collector, City of Saskatoon. Assistant Comptroller General, Province of Manitoba. Canada Land and Irrigation Company, Limited. Canadian Farm Loan Board. Canadian National Railways. Canadian Pacific Railway Company. City Assessor and Tax Collector, Regina, Saskatchewan. City Archivist and Statistician, Quebec. Commissioner of Agricultural Loans, Province of Ontario. Department of Natural Resources, Province of Saskatchewan. Hudson's Bay Company. Land Settlement Board, Province of British Columbia. Lethbridge Northern Irrigation District, Colonization Department. Manitoba Farm Loans Association. Provincial Auditor, Province of Alberta. Saskatchewan Farm Loan Board.

STOCK AND BOND DEALERS - Calgary Stock Exchange. Vancouver Stock Exchange.

GOVERNMENT - Col. J.R. Munro, Chief, and Miss M.I. Maclean of the Finance Statistics Branch, Dominion Bureau of Statistics. Assistant Treasurer, Province of Quebec. Board of Public Utilities Commissioners, Edmonton, Alberta. City Treasurer, Lethbridge, Alberta. Comptroller General, Province of British Columbia. Department of Health and Public Welfare, Province of Manitoba. Department of Highways and Transportation, Province of Saskatchewan. Department of Municipal Affairs, Province of Saskatchewan. Department of Public Works, Province of Manitoba. Deputy Minister of Finance, Province of British Columbia. Deputy Minister of Municipal Affairs, Province of Quebec. Deputy Provincial Treasurer, Nova Scotia. Dominion Mortgage and Investments Association, Toronto, Ontario. Mothers' Allowance Department, Province of Alberta. Municipal Commissioner, Province of Manitoba. National Harbours Board, Ottawa. Old Age Pensions Board, Edmonton, Alberta. Old Age Pensions Branch, Province of Manitoba. Provincial Auditor, Alberta. Provincial Auditor, Prince Edward Island. Superannuation Commission, Province of British Columbia. Treasury Department, Province of Ontario. Treasury Department, Province of Saskatchewan.

EMPLOYMENT AND EARNINGS - A. J. Pelletier, F.S.S., Chief, Demography Branch, and A.H. LeNeveu, M.A., and W. Nesbitt of the Occupational Division. M.E.K. Roughsedge, of Employment Statistics Division, Dominion Bureau of Statistics.

EDUCATION - J.E. Robbins, Ph.D., Chief, Education Statistics Branch, Dominion Bureau of Statistics.

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The Bureau is particularly indebted to those contributing to the Report on National Income 1926-1937 for the Dominion-Provincial Relations Commission. Messrs. MacGregor, Rutherford and Deutsch also servied on a committee organized by the Bureau for a discussion of national income; Mr. S.A. Cudmore, Assistant Dominion Statistician, acted as chairman of this committee and in addition to the authors of the present report, Messrs. R.B. Bryce of the Finance Department and H. Marshall and A.L. Neal of the Bureau participated.

Inspiration has been derived from the publications of the National Bureau of Economic Research of New York and the Income Division of the Department of Commerce in Washington; valuable suggestions were received from Dr. Kuznets of the former and from Robert R. Nathan and John L. Martin of the latter.

Note on Method of Dealing with the Adverse International Balance on Dividends and Interest.

Canada, on balance, pays to residents of other countries more in dividends and interest than is received from external sources. In the record of the international balance of payments during the inter-war period the balance of the sum of dividends and interest is consequently negative. Owing to the lack of adequate data for the preparation of estimates, this balance was not distributed by industrial and service groups in the tables and charts of the present report. The deduction was made from general totals in some cases, as shown in line 32 of Table 3, pages 38 and 39.

The phrase "Including negative international balance on dividends and interest" used as a headnote for tables and charts signifies that the balance was deducted and the reduced totals consequently placed on a realized basis.

On the other hand, the statement "Excluding negative international balance on dividneds and interest" means that the balance was not deducted and that the original totals remain on a produced basis.

NATIONAL INCOME-
ECONOMIC DIVISIONS AND GROUPS

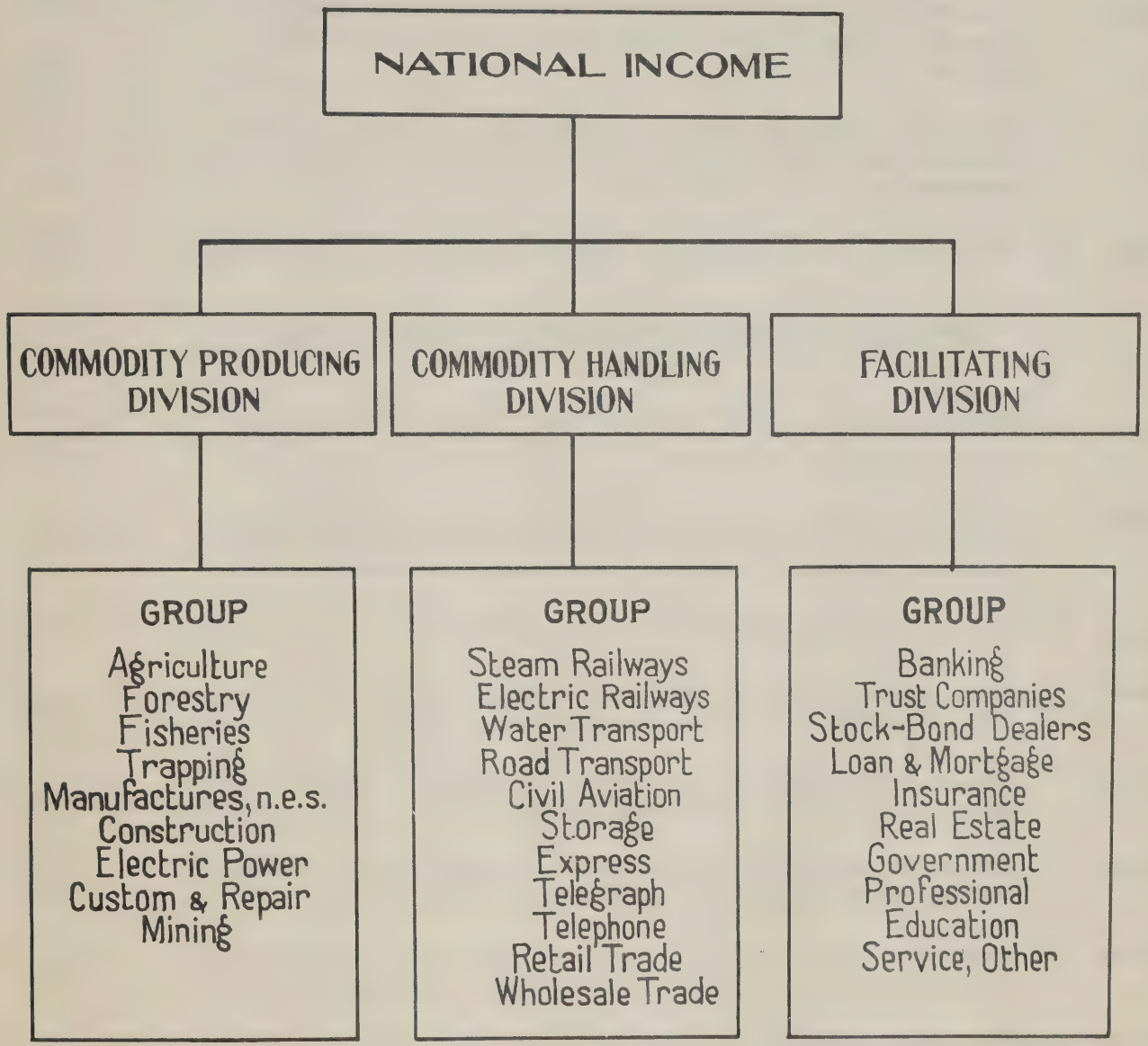


TABLE OF CONTENTS

Chapter 1.

GENERAL ANALYSIS

Section 1. - National Income, 1919-1938.
(Pages 16 - 25)

Section 2. - Productive Sources of National Income.
(Pages 26 - 44)

Section 3. - Types of Payment.
(Pages 45 - 73)

Section 4. - The Gainfully Occupied.

(Pages 74 - 90)

Page

Section 6. - Monthly Computation of National Income, 1935-1940.

(Pages 99 - 103)

Section 7. - Disposal of Family Income.

(Pages 104 - 110)

Section 8. - National Income in Relation to Other Economic Factors.

(Pages 111 - 124)

Page

Section 9. - Other Estimates of the National Income.

(Pages 125 - 128)

Section 10. - International Comparisons of National Incomes.

(Pages 129 - 135)

Chapter II

SCOPE OF ENQUIRY AND METHOD OF APPROACH

Section.

DOMINION BUREAU OF STATISTICS - OTTAWA

GENERAL STATISTICS BRANCH

Dominion Statistician: R. H. Coats, LL.D., F.R.S.C., F.S.S.(Hon.)
Statistician: Sydney B. Smith, M.A.

CHAPTER I

GENERAL ANALYSIS

List of Sections

Section 1

The National Income, 1919-1938.

There are at least three approaches to an estimate of the national income: (a) production; (b) distribution to individuals; and (c) disposal for consumption or investment. Under present circumstances the most effective method of estimating the Canadian national income consists in taking the industrial and service groups as the point of departure. Sufficient data are available to permit an estimate of production for a considerable number of such groups. After the cost of materials, general expenses and depreciation have been deducted from the gross revenues, the remainder may be regarded as the contribution of the industry to the national income.

The method based on the distribution of income to individuals because of their personal earnings or ownership has greater possibilities. Owing to the availability of data, it is possible to make estimates throughout the entire field of productive activity. The inclusion of the positive or negative savings of enterprises, along with direct payments to individuals, leads to a total which is theoretically identical with that obtained by a study of production. The best method of estimating expenditure for consumption and investment is by an analysis of the value of commodities made available for current consumption or added to the productive equipment.

The national income may be briefly defined as: (a) the aggregate value of the goods and services produced during a given period; (b) the sum of the payments to individuals and the positive or negative savings of enterprises; or (c) the sum of personal expenditure for current consumption and investment for the formation of capital. As intimated above, the second definition, referring to the receipt of income by individuals with adjustment for the savings of productive enterprises, is of most interest from the computors' standpoint. The trend of the national income, especially of the "real" national income as distinguished from the dollar version is the only valid and complete measure of economic progress. Only in such an estimate are all forms of economic activity included and each given its proper weight. The reader is directed to a more extended discussion of scope and method given in Chapter II.

Measured in current dollars, the national income of Canada showed marked fluctuation during the inter-war period. Mainly reflecting the currency inflation immediately following the first world war, the national income rose from $4,087 million in 1919 to $4,614 million in 1920. The drop to $3,735 million in 1921 reflected the marked setback of that period. The subsequent advance in economic activity continued for eight years, culminating in 1929. The maximum income of the twenty-year period at $5,149 million was then reached, prosperity being practically general in the thirty groups regarded as constituting the national economy.

A reversal followed, lasting with unprecedented severity until 1933. The decline in dollar income occasioned by dislocation in productive enterprises and price levels amounted to no less than $2,354 million or nearly 46 per cent in the short space of four years. (Table 9.) Aside from the temporary recession in 1938, expansion in economic activity has been characteristic of the more recent years after 1933. According to preliminary calculations, an increase was shown in 1939 and more markedly in 1940 over an income of $4,246 million recorded in 1938.

The severity of the fluctuations in the inter-war period, especially the heavy loss to the Canadian economy between 1929 and 1933, is clearly indicated by the national income totals. Our economy is simply the method by which Canada's eleven million people obtain their living. The flow of commodities from primary industry to secondary industry and eventually to the consumer through commercial channels is a continuous process. The money flow is in the opposite direction, from the consumer through the retailer to the various groups engaged in the production and handling of commodities. More specifically, three main currents may be enumerated. First, payments are made by productive organizations to individuals for their contribution whether in the form of personal effort or ownership. Second, individuals pay for goods and services required for consumption. Third, savings are invested in projects adding to the productive equipment. Statistics of the national income with its several distributions are consequently an excellent instrument for tracing the operations of the national economy. The money flow which the estimates of national income measure at three different strategic points is the financial counterpart of the production-consumption process.

The movement of the national income in the inter-war period throws into sharp relief the economic waste of the present system. An example is the idleness of men and equipment occasioned by the recent depression. The amount of the loss is debateable, but it is significant that the long-term trend of the money income was downward during the twenty years. Determined by the method of least squares,

the average decline from 1919 to 1937 was no less than $37.65 million per year. The average per annum national income during the second decade of the period was $3,763 million against $4,247 million in the first decade (1919-1928), a decline of approximately 11.4 per cent. These tendencies are shown as (a) in Table 1 and Chart 1.

The contraction of the national income after 1929 was due in part to a decline in the price level, so that an adjustment for price changes is obviously in order. While the dollar is the most convenient unit for measuring Canadian income, the money of 1938 was on quite a different footing from that of 1919 in terms of purchasing power. If, therefore, we express the income of the various years in terms of current dollars and make no further correction, the changes in the totals would not carry the implied significance. What counts with the average citizen is not only how many dollars he receives per annum, but also what amount of goods or services a given number of dollars will buy. The very comprehensive nature of the concept of national income renders the preparation of a suitable index number of prices exceedingly difficult. The best solution available appears to be the use of the Index of the General Price Level prepared by Mr. H.F. Greenway of the Internal Trade Branch of the Bureau of Statistics and published in the annual report of Bank Debits and Equation of Exchange for 1937. That index, on the base of 1926, was constructed from the following categories and weights:

Industrial commodities, 11.4. Farm prices, 11.4. Retail foods, 11.4 Rents, 5.7. Other cost of living, 11.4. Transportation costs, 5.7. Security prices, 11.4. Producers' equipment, 11.4. Hardware prices, 3.4. Composite wages, 17.0.

Thus, dividing the amount of the national income by the appropriate index for each year, we obtain a revised series from which the effect of price changes may be considered to have been eliminated. The result may be defined as the national income expressed in prices of 1926. It may also be defined as the real income representing the production of goods and services without the complicating element of price change.

The real income of Canada, as thus established, showed an upward trend during the period under review, despite the handicap of industrial inactivity during the depression and the persistence of adverse weather conditions in western grain areas. Calculations based on Table 1 indicate a secular trend increase of $24.9 million per year during the period. (See also Chart 2). The average in the last decade was $4,240 million against $4,138 million in the first, a gain of approximately 2.5 per cent.

National income expressed in 1926 prices is a much better measure of changes in the volume of commodities and services produced than the estimates shown in current market values. It is apparent that the rise in volume was appreciable, but this fact was obscured in the statement of money income by the marked decline of prices from the inflated levels existing at the beginning of the period. From 1921 to 1929, real income rose 39.3 per cent compared with an increase of 37.9 per cent in income at current prices. The decline from 1929 to 1933 was only 28.5 per cent in real income as compared with 45.7 per cent in income expressed in terms of current values.

The favourable showing of real income is compromised by the effect of population growth. National income is mainly produced by the efforts of

individuals and a large part in turn becomes available for consumption by individuals. It is consequently logical to compare the trend of income with that of the total number of the people as well as with the number of the gainfully occupied.

The per capita income in prices of 1926 averaged $397 in the second decade of the period against $454 in the first. The number of gainfully occupied on a full-time basis, as given in Table 1, showed an increase proportionately somewhat less than the growth of population. The net result was that the decline in the average income for the gainfully occupied on a full-time basis was 4.6 per cent between the two decades, compared with a per capita recession of 12.6 per cent in terms of the population as a whole.

DESCRIPTION OF METHOD

The main object of the present chapter is the analysis of the national income and its distribution. Consequently a necessary step is to eliminate the influence of the long-term trend. It is assumed for this purpose that the trend for any particular series may be represented by a continuous straight line. The determination of what the trend will be consists in finding the constants for the equation of the line which we may postulate as $Y = a + bX$. No one line passes through all the points of any of the time series used in this connection and there is the necessity of finding by mathematical process a compromise line which will come as near as possible to agreeing with the given data. This is the method of least squares. Although the process of determining the values of the constants 'a' and 'b' by this method is somewhat complicated, it takes all the observations into account and gives each an equal weight.

The formulae used are: (1) $\sum y = na + b \sum(x)$ [1/]

and (2) $\sum xy = a \sum(x) + b \sum(x^2)$,

the symbols employed having the following meanings:

$\sum(y)$	:	the sum of the values of y.
$\sum(x)$	:	the sum of the values of x.
$\sum(xy)$	:	the sum of the products of the paired x's and y's.
$\sum(x^2)$	:	the sum of the squares of the values of x.
and n	:	the number of pairs of values.

The work of computation is facilitated by a tabular arrangement using 1928, the middle point, as the origin. The values of 'x' represent the time factor, while the values of 'y' are, in this case the corresponding indexes of the national income.

1/ Mills, Frederick. Statistical Methods Applied to Economics and Business. Revised Edition. Henry Holt, New York. CF. 1938.

INTER-WAR TREND OF THE INDEX OF NATIONAL INCOME, 1919 - 1937.

1926 = 100

Year	Time Factor x	Index of National Income y	xy	x^2
1919	- 9	91.00	- 819.00	81
20	- 8	102.70	- 821.60	64
21	- 7	83.10	- 581.70	49
22	- 6	83.70	- 502.20	36
23	- 5	87.80	- 439.00	25
24	- 4	85.80	- 343.20	16
25	- 3	92.60	- 277.80	9
26	- 2	100.00	- 200.00	4
27	- 1	104.20	- 104.20	1
28	0	114.30	- 0 -	0
29	+ 1	114.60	+ 114.60	1
30	+ 2	96.30	+ 192.60	4
31	+ 3	77.80	+ 233.40	9
32	+ 4	64.40	+ 257.60	16
33	+ 5	62.20	+ 311.00	25
34	+ 6	70.60	+ 423.60	36
35	+ 7	75.20	+ 526.40	49
36	+ 8	85.20	+ 681.60	64
37	+ 9	96.60	+ 869.40	81
Total		1,688.10	- 478.50	570

n = 19

Totals $\sum x = 0$ $\sum y = 1{,}688.10$ $\sum xy = -478.50$ $\sum x^2 = 570$

Applying formula (2) : $b = \frac{-478.50}{570} = -0.8395$

Using formula (1) : $a = \frac{1{,}688.10}{19} = 88.85$

Thus the annual decrement or the amount of annual change in the value of the independent variable is found to be 0.8395, while at the point of origin in 1928 the value is 88.85. From this centre the trend line can be extended back to 1919 by adding nine times the annual decrement and brought forward to 1937 by deducting a similar amount.

Having established the inter-war trend we next obtain, year by year, the differences between the original data (O.D.) and the secular trend line (S.T.). These take the form of deviations from the trend line, positive amounts being normally shown in prosperous years and negative deviations in depressed years. As the standard deviation is the square root of the arithmetic mean, (in this case the secular trend line) 1/, the next step gives the standard deviation (σ) of 13.82.

1/ Persons, W.M., Indices of General Business Conditions, p. 182. The Harvard University Committee on Economic Research, Cambridge, Mass. 1919.

NATIONAL INCOME ON A REALIZED BASIS, 1926 = 100

Year	Original Index (1)	Secular Trend b = - 0.84 (2)	Differences (1 - 2) (3)	Differences Squared $(3)^2$ (4)
1919	91.00	96.41	- 5.41	29.268
20	102.70	95.57	+ 7.13	50.837
21	83.10	94.73	- 11.63	135.257
22	83.70	93.89	- 10.19	103.836
23	87.80	93.05	- 5.25	27.563
24	85.80	92.21	- 6.41	41.088
25	92.60	91.37	+ 1.23	1.513
26	100.00	90.53	+ 9.47	89.681
27	104.20	89.69	+ 14.51	210.540
28	114.30	88.85	+ 25.45	647.703
29	114.60	88.01	+ 26.59	707.028
30	96.30	87.17	+ 9.13	83.357
31	77.80	86.33	- 8.53	72.761
32	64.40	85.49	- 21.09	444.788
33	62.20	84.65	- 22.45	504.003
34	70.60	83.81	- 13.21	174.504
35	75.20	82.97	- 7.77	60.373
36	85.20	82.13	+ 3.07	9.425
37	96.60	81.29	+ 15.31	234.396

Sum of differences squared =	3,627.921
Divided by number of items (19) we have	190.9432
The square root of which is the standard deviation (σ)	13.82

The measure of the proportion of the variation in one variable (e.g. the index of the national income) which is associated with another variable (e.g. international credits) is called the coefficient of correlation. The symbol "r" is used to represent it. It is a measure of the closeness of the relationship between the two factors.

Each factor in this study has been subjected to the same treatment. For example, the index of international credits for the period from 1919 to 1937 has a standard deviation of 18.27, an annual increment of + 0.52 and an origin at 1928 of 83.2.

In the case where r = + 1.0, perfect correlation exists and - 1.0 denotes perfect inverse correlation. Thus the limits of correlation are + 1.0 and - 1.0, and the following nomenclature of the degrees of correspondence between two economic series is used: 2/

Over 0.90, excellent.
From 0.80 to 0.90, very good.
From 0.70 to 0.80, good.

2/ Berridge, William A., Cycles of Unemployment in the United States, 1903-1922, page 24. Houghton Mifflin Company, Boston and New York, 1923.

From 0.60 to 0.70, fair.
From 0.50 to 0.60, rather low.
Below 0.50 very low or not significant.

According to R.A. Fisher's "Statistical Methods for Research Workers" (p. 174), the lowest value of 'r' for which the correlation is significant is 0.456, where there are seventeen degrees of freedom. The number of degrees of freedom is taken as 2 less than the number of pairs or years in the sample which in this instance is 19. This reading is for a 5 per cent level of significance.

The "probable error" of a correlation coefficient means so little when applied to time series of economic data, that it was omitted from the present study. Of course, in all correlation analysis the larger the sample the greater the chance of exceptional items cancelling out and the more significant the degrees of correspondence or co-variation.

Having the annual difference between the original data and the secular trend, and also the standard deviations, the correlation between two factors is found by adding the product of these differences and dividing the result by the product of the standard deviations and the number of pairs of variables, i.e., the number of yearly indexes.

Formula, $$\frac{(x_1 - y_1)\ (x_2 - y_2)}{n\sigma_1\ \sigma_2}$$

Year	Index of National Income Difference between O.D. and S.T. (1)	Index of International Credits. Difference between O.D. and S.T. (2)	(1) x (2) (3)
1919	- 5.41	+ 2.30	- 12.443
20	+ 7.13	+ 6.80	48.484
21	- 11.63	- 22.40	260.512
22	- 10.19	- 17.00	173.230
23	- 5.25	- 7.00	36.750
24	- 6.41	- 3.80	24.358
25	+ 1.23	+ 11.00	13.530
26	+ 9.47	+ 15.80	149.626
27	+ 14.51	+ 20.60	298.906
28	+ 25.45	+ 34.90	888.205
29	+ 26.59	+ 23.60	627.524
30	+ 9.13	+ 0.50	4.565
31	- 8.53	- 16.50	140.745
32	- 21.09	- 27.40	577.866
33	- 22.45	- 29.80	669.010
34	- 13.21	- 17.80	235.138
35	- 7.77	- 6.40	49.728
36	+ 3.07	+ 11.10	34.077
37	+ 15.31	+ 21.70	332.227

Correlation of national income with international credits $= \frac{4552.038}{19 \times 13.82 \times 18.27} = + 0.9489$

n=19; standard deviation of national income, 13.82; of international credits, 18.27.

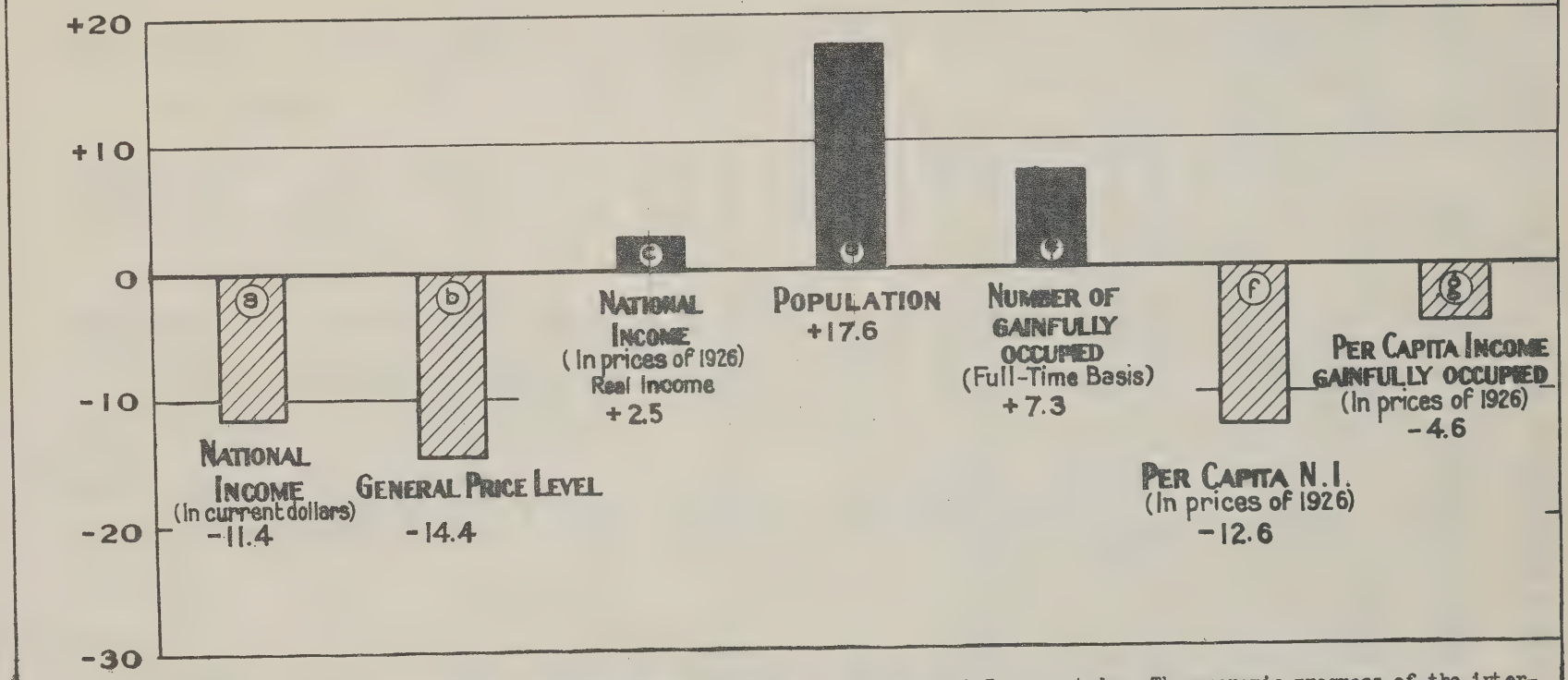
Chart 1

PERCENTAGE CHANGE OF NATIONAL INCOME AND OTHER FACTORS

FROM THE

FIRST DECADE TO THE SECOND OF THE INTER-WAR PERIOD

See Table 1



This chart presents in the simplest possible form the results of the National Income study. The economic progress of the inter-war period is portrayed by breaking it for purposes of analysis into two decades, running from 1919 to 1928, and from 1929 to 1938, respectively. The percentage change in the second decade from the first, indicates with considerable accuracy the inter-war trend. The greater severity of the depression in the later decade is, of course, reflected in the declines in the money income and the per capita results. The money income showed an appreciable decline, but the percentage drop in the general price index was greater than that of the money income. Consequently, real income or income expressed in prices of 1926 showed a slight increase between the two decades.

The population of Canada recorded a marked gain, overshadowing the increase in the number of gainfully occupied on a full-time basis. A considerably greater proportion, therefore, of the people were unoccupied during the second decade than in the first. The decline in the per capita income of the population amounted to 12.6 p.c., while in view of the more moderate increase in the fully gainfully occupied, the ratio of the real income to the number of this group receded only 4.6 p.c.

TABLE 1. - NATIONAL INCOME IN CURRENT PRICES AND IN PRICES OF 1926 COMPARED WITH THE POPULATION AND NUMBER OF GAINFULLY OCCUPIED ON A FULL-TIME BASIS.

(Including Negative International Balance on Dividends and Interest)

Year	National Income in Current Dollars (Money Income) ($000's)	General Price Level 1926=100	National Income in Prices of 1926 (Real Income) ($000's) a ÷ b	Population (000's)	Number of Gainfully Occupied Full-time Basis (000's)	National Income in Prices of 1926	
						Per Capita (dollars) c ÷ d	Per Person Gainfully Occupied (dollars) c ÷ e
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1919	4,087,310	106.6	3,834,250	8,311	3,208	461	1,195
20	4,613,933	121.7	3,791,235	8,556	3,353	443	1,131
21	3,734,622	105.9	3,526,555	8,788	3,107	401	1,135
22	3,762,424	96.7	3,890,821	8,919	3,132	436	1,242
23	3,945,344	97.0	4,067,365	9,010	3,194	451	1,273
24	3,854,151	97.9	3,936,824	9,143	3,167	431	1,243
25	4,161,493	99.3	4,193,849	9,294	3,212	451	1,306
26	4,493,576	100.0	4,493,576	9,451	3,326	475	1,351
27	4,682,357	101.3	4,622,268	9,637	3,469	480	1,332
28	5,137,527	102.3	5,022,030	9,835	3,641	511	1,379
29	5,148,728	104.8	4,912,908	10,029	3,742	490	1,313
30	4,325,846	98.8	4,378,387	10,208	3,703	429	1,182
31	3,497,854	88.0	3,974,834	10,376	3,454	383	1,151
32	2,893,265	80.2	3,607,568	10,506	3,286	343	1,098
33	2,794,772	79.6	3,511,020	10,681	3,243	329	1,083
34	3,170,578	81.5	3,890,279	10,824	3,364	359	1,156
35	3,381,374	83.0	4,073,945	10,935	3,455	373	1,179
36	3,828,993	84.2	4,547,497	11,028	3,551	412	1,281
37	4,342,213	89.8	4,835,426	11,120	3,703	435	1,306
38	4,246,396	90.9	4,671,632	11,209	3,691	417	1,266
Averages							
1919-1938	4,005,138	95.5	4,189,113	9,893	3,400	426	1,230
1919-1928	4,247,275	102.9	4,137,877	9,094	3,281	454	1,259
1929-1938	3,763,002	88.1	4,240,349	10,692	3,519	397	1,201
p.c. change	- 11.40	- 14.38	+ 2.48	+17.57	+7.26	-12.56	-4.61

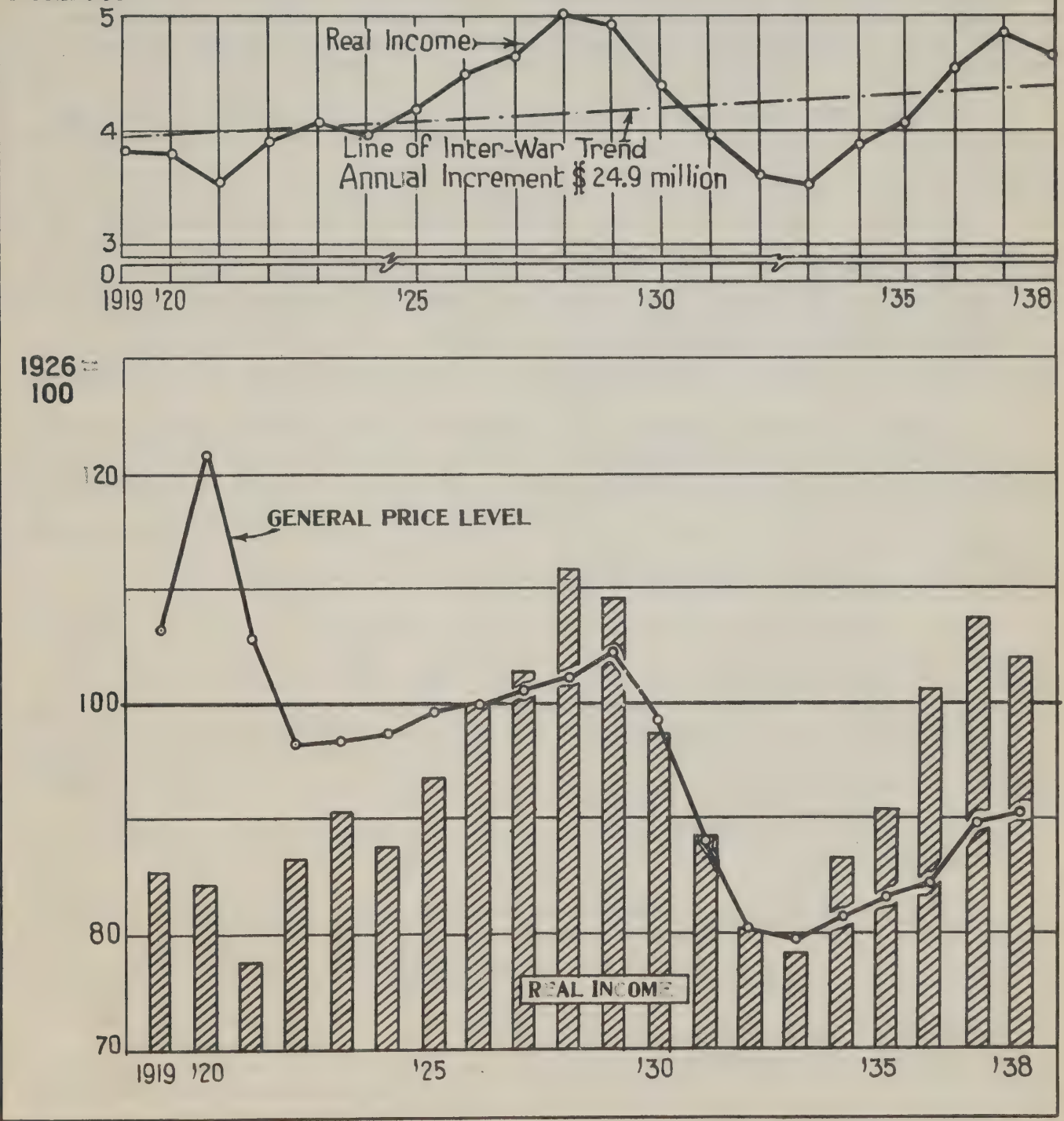
(a) See Chapter 2 for method of computation. (b) For general description of construction see text and Annual Report of Bank Debits 1937, D.B.S. (d) For method of computation see Canada Year Book 1932, pages 108-109. See also 1939 edition p. 113. (e) See Section 4 of this chapter.

NATIONAL INCOME OF CANADA 1919-1938

Analysis of Real Income in Inter-War Period

(Inclusive of Negative International Balance on Dividends and Interest)

(See Table I)



Section 2.

Productive Sources of National Income.

Information regarding the general totals of the national income, briefly presented in Section 1, serves only as an introduction to a discussion of the constituent divisions and groups. The trend of the income of the various components is a significant phase of the present study. The general estimate conceals many changes in the relations and movements of the constituents, essential for an understanding of the working of the Canadian economic system.

We are here concerned with the national income as a measure of the net productivity of the Canadian economy. The inter-war period was characterized by the continuance of the process towards greater diversification. In the early history of the Dominion, the wealth of natural resources led to concentration upon the production of staples in the form of foodstuffs and industrial raw materials, a large proportion of which was exported to countries in a more advanced stage of economic development. While the primary industries still occupy a most important place in the Canadian economy, the more rapid growth of the secondary and service divisions has resulted in a better balanced economy. The productive system has been adapted during the last twenty years to meet the demands of the domesti market while maintaining a credit balance on current account with other countries.

In this statement regarding the productive sources of the national income, the main objective will be to set forth: (1) the relative importance of the different activities; (2) the inter-war trend of decline or advance; and (3) the sensitivity of different types of activity to the impact of depression and recovery. For purposes of analysis, the net national product will be broken down according to the major types of activity, such as agriculture, manufactures, finance and service, with their subdivisions.

The relative importance of three economic divisions and fourteen major groups is presented in Charts 3 and 4, respectively. The industrial and service groups listed in Table 2, page 36 and Chart 7, page 37 are assembled in three economic divisions. Division 1 coincides roughly with the list of groups included in the Survey of Production published by the Bureau annually since 1921. The division consequently comprises the sectors of the economic system engaged in the production of commodities whether of a primary or secondary nature. The primary industries include agriculture, forestry, fisheries and trapping, mining and electric power, while the secondary section embraces manufacturing, construction and custom and repair.

The second division is engaged in transportation, communication and the sale of commodities and related activities. The term "commodity handling" applied to this division is only roughly applicable. Steam railways engage in passenger traffic although freight is the main source of income, and communication is only partly bound up with the movement and sale of commodities. The combined transportation and communication activities, however, are more connected with commodity handling than with service or production in the restricted sense. The other activities, consisting of finance, government and service other than custom and repair, are for convenience described as the "facilitating" division. These include financial organizations such as banking, trust, loan and mortgage, investment and insurance. Under real estate is entered not only

the operations of the industry itself but also non-farm residential and commercial net rentals and mortgage interest. Government, including Dominion, provincial and local administration, is an expanding enterprise included under this heading. Finally, professional, educational and other service activities, exclusive of custom and repair, complete the division.

Commodity production contributed to the national income a yearly average of $1,972 million during the twenty years under review, compared with $954 million derived from the handling division and $1,316 million from the facilitating activities. It is surprising to find that more than thirty per cent of the national income was derived from activities other than the production and distribution of commodities. (See Chart 4, page 31).

Relative Importance of Fourteen Major Groups.

For convenience, a number of minor classes have been combined, thus reducing for purposes of study the thirty original groups to fourteen major groups. The classification follows, with appropriate adaptation, the Bureau's general grouping system. Agriculture includes the income derived by the farmer in woods operations on his own property, but excludes entirely the return from the value added in dairy factories. Forestry comprises the activities of lumber and pulp and paper mills, as well as woods operations on lands other than farmers' wood lots. Manufacturing is exclusive of processes carried on in close connection with the primary industries, the exceptions comprising sawmilling, pulp and paper, fish curing and packing, non-ferrous metal smelting and several mineral industries, such as cement, salt, lime and clay products.

The following activities are included under transportation -- steam and electric railways, water and road transportation, civil aviation, storage and express. Telegraph and telephone industries comprise communications.

The finance industries embrace banking, trust companies, stock and bond dealers, loan and mortgage companies, insurance and real estate. The latter heading comprehends non-farm mortgage interest and net rentals, paid and imputed. The service groups are manifold, embracing as they do professional, educational and other activities.

The outstanding groups as sources of production were agriculture and manufacturing n.e.s. After eliminating the duplication with the primary industries noted above, manufactures took second place in the inter-war period. Agriculture enjoyed prosperity during the first decade and retained the foremost place in the period as a whole, despite the reversal of later years. The contribution of agriculture was no less than 15.9 per cent of the total national income produced, as compared with a percentage of 15.1 for manufactures n.e.s.

Service, including custom and repair, and trade groups competed for third and fourth places, with percentages of 12.9 and 12.2, respectively. Government, transportation and finance followed in the order named. The seven above-mentioned groups are the major contributors to Canadian income, their combined share amounting to no less than about 85 per cent. The remaining groups of construction,

forestry, mining, electric power, fisheries and trapping, telegraph and telephone also play an important role, but are somewaht overshadowed by the magnitude of the larger activities.

The relative importance of the thirty original classes is shown in Table 2 and Chart 5. Agriculture and manufactures n.e.s. stand out in this comparison as Canada's leading industries. The remainder may be divided into two sections according as their average contribution to the national income was greater or less than $100,000,000. The first section consists of ten classes ranging in order of size from government to professional activities. A marked falling off in magnitude is recorded in comparing the industries in this section. The annual average income produced by government was $465 million, while professional activities averaged $153 million. Between these limits retail trade took second place with a contribution of $344 million, while steam railways followed with $274 million. Other service, real estate, construction and wholesale trade followed in the order named. The returns from forestry and mining were both slightly in excess of that for professional services.

The second section, headed by educational activities, consisted of eighteen classes participating in the production of income on a descending scale of importance.

The Inter-war Trend.

The economic structure is constantly changing, sometimes slowly as consumer wants gradually shift or as new inventions are gradually developed and put into use. The automobile and the radio are excellent examples, calling for new production arrangements. Economic changes are sometimes violent, as when a wave of mergers rapidly alters the industrial scene or a new impetus is given to labour organization by a shift in public policy. An understanding of the Canadian economy is a first step towards the reconciliation of present operating policies with the essential nature of the system.

While the aggregate of the money income of Canada recorded decline during the last twenty years, the reduction was by no means general throughout the entire field. The industries engaged in commodity production and handling show a decline in the second decade from the first of 18.1 per cent and 15.6 per cent, respectively. The facilitating industries as defined above, on the other hand, recorded an increase of approximately 11 per cent.

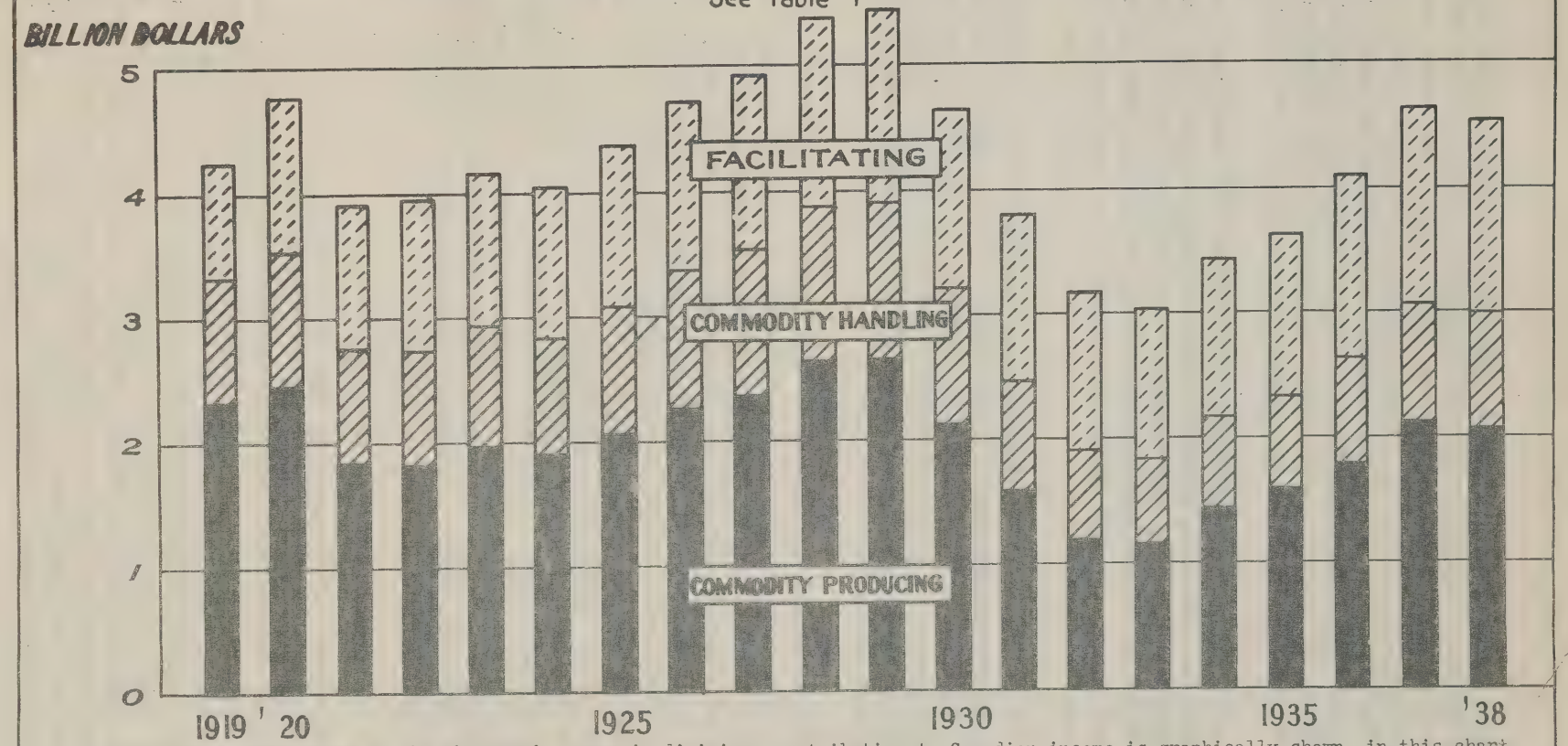
Referring to the major groups, agriculture was relatively prosperous during the twenties, but met with a severe setback in the latter half of the period. The reversal was due to several adverse conditions, notably the world-wide depression and consequent lack of demand in external markets for the agricultural surplus. This situation was aggravated by the policy of self-sufficiency adopted in most European countries. In addition to the extremely low level of farm prices, the crop volume was reduced by a succession of droughty seasons. The yearly average income produced declined from $856 million in the first decade to $495 million in the second.

Chart 3

PRODUCTIVE SOURCES OF THE NATIONAL INCOME OF CANADA BY THREE ECONOMIC DIVISIONS

Excluding negative international balance on dividends and interest

See Table 4



The relative importance of the three main economic divisions contributing to Canadian income is graphically shown in this chart. Thirty-one per cent of the national income originated in the facilitating division, consisting of finance, government and service. Furthermore, the proportion of the contribution of this division rose from 28 p.c. in the first half of the period to more than 34 p.c. in the second. It is also evident from the chart and from the accompanying tables that this division was much less sensitive to the impact of the depression than the divisions concerned directly with commodities. The decline from 1929 to 1933 was less severe and the subsequent recovery was necessarily of a more restricted character.

The commodity producing division, including nine industries reviewed by the Bureau from year to year in the Survey of Production, played a more important role as an originator of income. Its share, however, was somewhat less than half the total and a marked reduction was shown in the last decade. Being greatly affected by external demand and price decline, the income produced in this division in the last ten years was markedly lower than in the first ten. The commodity-handling division, including trade, transportation and communication, occupied an intermediate position in respect of relative importance, trend and fluctuation.

Forestry and the minor extractive industries also showed a declining trend during the twenty years. Construction was expanded in the first decade by the backlog of residential building accumulated during the war period and by the considerable acceleration in industrial construction. The hard times during the greater part of the last decade led to marked contraction in both lines. The mining and electric power industries, favoured by a background of important natural resources, maintained an upward trend over the period. The manufactures group was remarkably well maintained despite the temporary impact of the depression.

The two major groups constituting the commodity handling activities experienced a reversal in the last decade. The income produced by steam railways alone declined more than 32 per cent between the decades, while gains in the group were limited to road transportation, civil aviation, storage and telephones. Declines were shown in retail and wholesale trade, the reversal in the latter being relatively more important.

The record in the facilitating activities was more favourable, advances being shown in finance, government and service. In the finance section, gains were recorded in banking, trust companies, insurance and stock and bond dealing, overshadowing declines in loan and mortgage and real estate. The expansion of governemnt activities in recent years was reflected in the rise of more than 22 per cent in income produced.

Considerable detail in regard to the trend of different groups and divisions in the inter-war period is presented in Tables 2, 3 and 4, as well as in Charts 6 and 7. A mathematical process known as least squares was employed to give a more exact measurement of the inter-war trend than could be obtained by the percentage analysis of the two decades. This process consists in fitting a straight line to the annual data in such a way that the depression areas are approximately equal to the spaces apportioned to prosperity. The main purpose of the calculation is to determine whether the trend is upward or downward over a given period and to establish the amount of the annual increment or decrement. The bar Chart 7 indicates that fourteen of the thirty industries recorded an upward trend from 1919 to 1937, while an adverse situation obtained in the other sixteen. Civil aviation, electric power, trust companies and mining showed the greatest relative advance, while forestry, agriculture and construction experienced the worst reversals.

Sensitivity to Influences of Prosperity and Depression.

Knowledge of the general features of economic depression leads to the expectation that various industries will react unequally to the drastic contraction which characterized the last decade of the period under review. An analysis of the economic structure is not only made necessary by the depression in economic activity which followed 1929 but is greatly aided by that development. The rapid drop in national income from a value of over $5.1 billion in 1929 to under $2.8 billion four years later and the considerable recovery since that time gives the economic analyst what is almost equivalent to a laboratory experiment on the basis of which many structural characteristics may be observed.

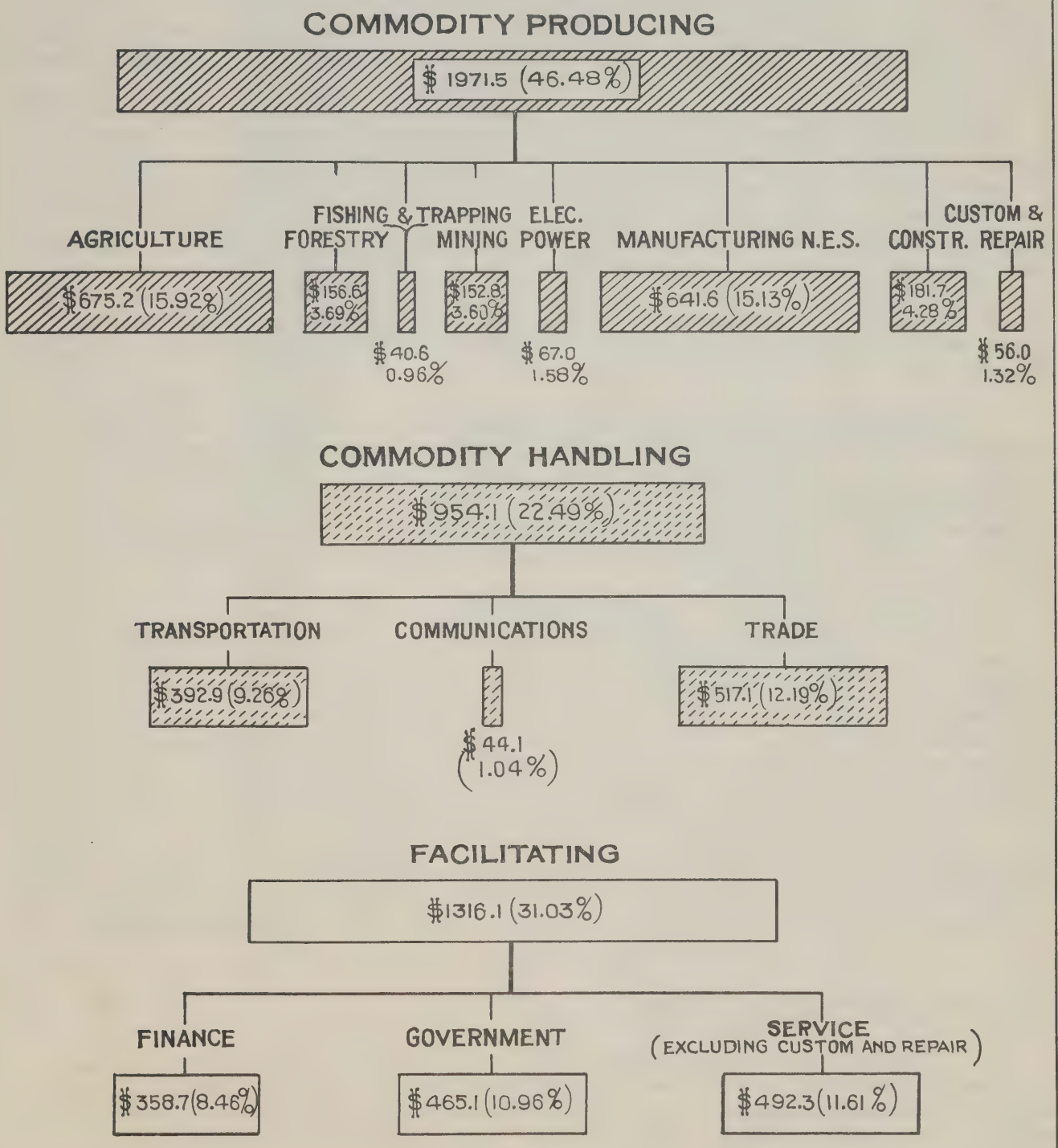
Some industries, sheltered from the pressure of changing conditions, continued to give employemnt and pay out only moderately changed volumes in income to labour and capital. Others, more exposed to adverse changes in com-

PRODUCTIVE SOURCES OF THE NATIONAL INCOME OF CANADA 1919-1938

ANNUAL AVERAGES IN MILLIONS OF DOLLARS AND PERCENTAGES BY SEGMENTS OF THE CANADIAN ECONOMY

(Excluding Negative International Balance on Dividends and Interest)

See Table 2



petitive markets and supplying services which were easily dispensed with in hard times, recorded shrinkages in employment and income greatly in excess of the total for the economic system as a whole.

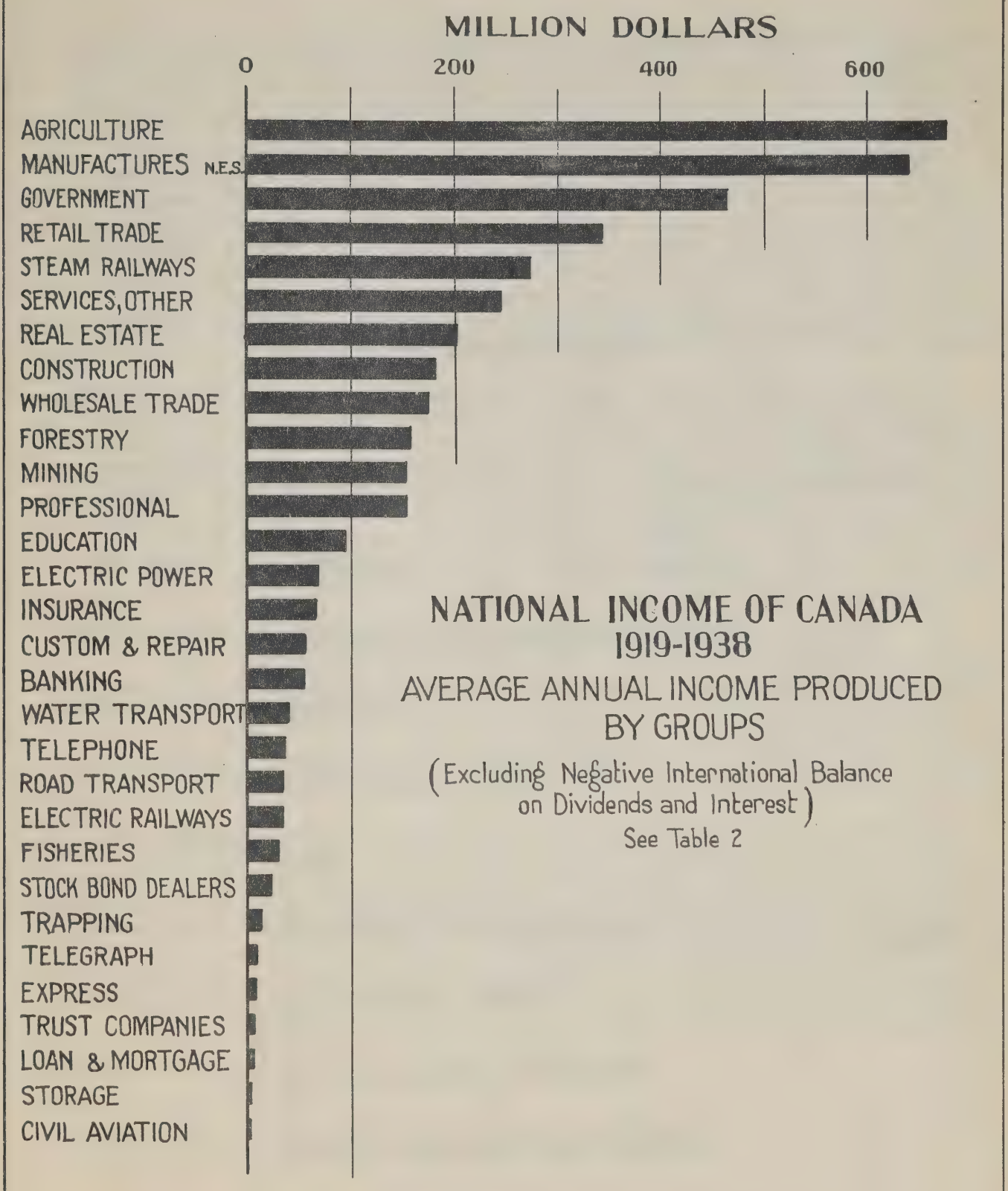
A rough measure of the amplitude of fluctuations is afforded by computing the percentage decline from 1929 to 1933 and the rebound from that low point to 1937. (See Table 2). The aggregate declined 44 per cent during the four years, probably one of the most far-reaching depressions on record. Declines were general in the three main divisions but considerable variation was shown in the extent of the change. The total for commodity production dropped nearly 56 per cent, while handling activities declined 47.6 per cent. The facilitating industries were more successful in resisting the ravages of the depression, the decline being limited to 26.3 per cent. The variation in the recovery from 1933 to 1937 was also noteworthy, the national total rising 52.3 per cent. The commodity production, handling and facilitating activities made general advances of 83 per cent, 40.6 per cent and 29.2 per cent, respectively. The percentage recovery from the low point of the depression in the income contribution of thirty industries is depicted in Table 2 and Chart 8. The forestry industry, including pulp and paper and lumber mills as well as woods operations, recorded the greatest relative gain in this respect, followed by mining, agriculture and manufactures n.e.s. The loan and mortgage industry showed further decline during the four years, while the recovery of education, banking and electric railways was of relatively minor proportions.

A more exact measure of sensitivity to altered economic conditions is presented in Chart 9. The yearly deviations from the inter-war trend were squared and the square root taken of the annual average of the sum of such squares. Using indexes on the base of 1926 of the contribution of each industry to the national income as original data, the results known as the standard deviations are an excellent gauge of the relative fluctuations of the thirty industries during the period in question.

Apart from civil aviation, a small industry with rapid development, mining recorded the greatest relative fluctuation in the inter-war period. This industry was followed by forestry, manufactures n.e.s. and construction. The trapping industry, largely catering to a luxury demand, was sixth on the list. The standard deviation of the index of the national income including negative international balances on dividends and interest was 13.82 (See Table 9) and it is interesting that sixteen industries showed greater fluctuation than the total, while fourteen recorded greater resistance to the impact of general conditions. Four groups of service activities, including professional, education, custom and repair and other service recorded smaller fluctuations than the grand total. Eight of the nine industries (the exception being custom and repair) engaged in the production of commodities, were subject to relatively wide fluctuation.

Inter-war Changes in Real Income.

It should not be overlooked that the above analysis refers to income expressed in changing price levels. The relatively important trends and fluctuations of the net production of industries reduced to a volume basis would present a different pattern. The trend of real income produced by a large



NATIONAL INCOME OF CANADA 1919-1938

AVERAGE ANNUAL INCOME PRODUCED BY GROUPS

(Excluding Negative International Balance on Dividends and Interest)

See Table 2

number of industries would make a more encouraging picture than that outlined in the present section. The price index system of the Bureau is unusually comprehensive, permitting the adjustment of the net production of many industries concerned with the output of commodities. The correction for the finance and service groups is another matter, involving almost insuperable difficulties. As indicated in Table 1 and Chart 2 of Section 1, the decline in the General Price Level during the twenty-year period leads to an increase in total real income which would probably be widely distributed among the thirty groups. Commodity prices are subject to wide fluctuations and marked variation in long-term trend, in contrast with the more stable situation in service rates. Price changes undoubtedly accounted in large measure for the wider fluctuations in the commodity divisions than in the facilitating activities. The indicated variation between the three main divisions in trend and fluctuation would be greatly modified by price adjustment of the totals.

A special study of the industries producing commodities is presented in Table 5 and Chart 10. The gross and net value of production for most of the nine industries is available through the annual census. These nine industries correspond with the list given in the annual Survey of Production published by the Bureau. The totals differ slightly from the results of that study, mainly owing to the different treatment of agriculture. The total for the present purpose was based on cash sales, consumption in kind by the farm family and the net rental of farm houses. Forest products from the wood lot were included, while the value added by dairy factories was disregarded.

Deducting the cost of materials, fuel and electricity from the gross operating revenues, we obtain the value added by the productive process. Additional payments to other enterprises in the form of miscellaneous expenses were also deducted, leaving the so-called gross national product. The depreciation estimated on the basis of fixed capital was the final deduction. The remainder was regarded as the income produced by the commodity groups or the contribution of this segment of the economy to the national income.

Gross commodity output, valued at the place of production, averaged $5,277 million during the twenty years. The decline from the first decade to the second was 11.6 per cent. As the wholesale price index declined 29.4 per cent in the same comparison, it is assumed that the volume of commodity production showed considerable increase over the period. It was estimated that the miscellaneous expenses showed a decline of 1.81 per cent between the two decades while the depreciation account rose 10.2 per cent. The net result was that the income produced recorded a decline of no less than 18 per cent in the thirties as compared with the twenties.

NATIONAL INCOME OF CANADA 1919-1938

ANNUAL AVERAGE INCOME PRODUCED BY THREE DIVISIONS AND TWELVE GROUPS DURING THE TWO DECADES

(Excluding Negative International Balance on Dividends and Interest)

(See Table 2)

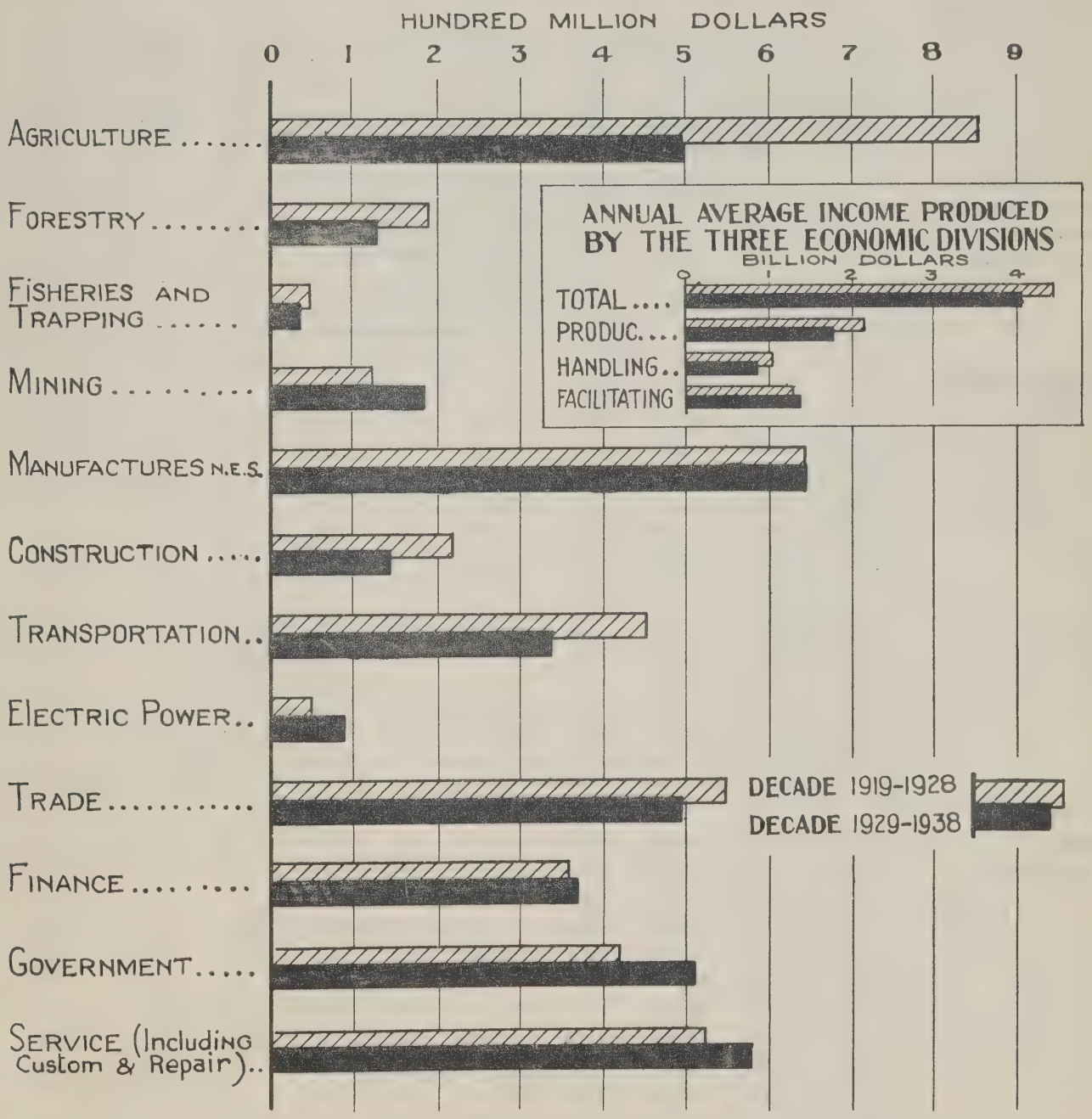


TABLE 2. - PRODUCTIVE SOURCES OF THE NATIONAL INCOME OF CANADA IN CURRENT PRICES, IN THOUSAND DOLLARS.

(Excluding Negative International Balance on Dividends and Interest)

Industrial or Service Groups	Annual Average 1919-1938	Percentage of Dominion Total	Annual Average 1919-1928	Percentage of Dominion Total	Annual Average 1929-1938	Percentage of Dominion Total	Percentage Change 1929-1938 / 1919-1928	Percentage Change 1933 / 1929	Percentage Change 1937 / 1933	Twenty Year Trend Annual Change 1926=100	Standard Deviation 1926=100
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
All Industrial and Service Groups	4,241,808	100.00	4,450,385	100.00	4,033,232	100.00	- 9.37	- 44.01	+ 52.34	- 0.68	13.32
Commodity Producing Division											
Agriculture	675,228	15.92	855,634	19.23	494,821	12.27	- 42.17	- 64.45	+ 86.12	- 3.27	17.63
Forestry	156,596	3.69	192,202	4.32	120,990	3.00	- 37.05	- 73.20	+202.91	- 3.50	22.39
Fisheries	29,372	0.69	34,131	0.77	24,614	0.61	- 27.88	- 55.23	+ 53.25	- 1.93	15.80
Trapping	11,248	0.27	13,824	0.31	8,672	0.22	- 37.27	- 55.62	+ 44.34	- 2.77	19.20
Mining	152,794	3.60	121,118	2.72	184,470	4.58	+ 52.31	- 36.10	+139.90	+ 4.54	28.53
Electric Power	66,994	1.58	46,155	1.04	87,833	2.18	+ 90.30	- 7.81	+ 13.04	+ 6.67	17.09
Manufactures, n.e.s.	641,600	15.13	640,505	14.39	642,695	15.93	+ 0.34	- 52.36	+ 74.98	- 0.30	19.38
Construction	181,748	4.28	216,440	4.86	147,055	3.65	- 32.06	- 65.46	+ 65.21	- 3.04	20.39
Custom and Repair	56,012	1.32	48,159	1.08	63,866	1.58	+ 32.61	- 22.32	+ 26.31	+ 2.81	11.60
	1,971,592	46.48	2,168,168	48.72	1,775,016	44.02	- 18.13	- 55.91	+ 85.00	- 1.52	17.21
Commodity Handling Division											
Steam Railways	273,574	6.45	326,225	7.33	220,923	5.48	- 32.28	- 59.75	+ 42.50	- 2.48	15.88
Electric Railways	33,257	0.78	34,655	0.78	31,859	0.79	- 8.07	- 33.66	+ 10.42	- 0.57	11.66
Water Transport	39,106	0.92	43,607	0.98	34,605	0.86	- 20.64	- 43.93	+ 41.40	- 1.61	13.62
Road Transport	34,407	0.81	34,120	0.77	34,695	0.86	+ 1.69	- 20.51	+ 12.98	- 0.19	7.91
Civil Aviation	689	0.02	243	0.01	1,134	0.03	+366.67	- 0.40	+ 11.78	+ 41.65	136.71
Storage	3,760	0.09	3,297	0.07	4,222	0.10	+ 28.06	+ 3.13	+ 18.35	+ 2.48	3.55
Express	8,112	0.19	8,854	0.20	7,370	0.18	- 16.76	- 39.12	+ 17.60	- 1.96	14.51
Telegraph	9,106	0.21	9,217	0.21	8,995	0.22	- 2.42	- 50.94	+ 67.89	+ 0.09	17.46
Telephone	35,037	0.83	29,348	0.66	40,727	1.01	+ 38.77	- 20.24	+ 15.57	+ 3.16	13.66
Retail Trade	344,193	8.11	360,116	8.09	328,270	8.14	- 8.84	- 46.53	+ 46.35	- 0.78	13.94
Wholesale Trade	172,889	4.08	184,950	4.16	160,828	3.99	- 13.04	- 43.82	+ 48.41	- 0.91	13.10
	954,130	22.49	1,034,632	23.26	873,628	21.66	- 15.56	- 47.57	+ 40.56	- 1.22	13.25
Facilitating Division											
Banking	55,047	1.30	54,236	1.22	55,858	1.38	+ 2.99	- 20.15	+ 3.89	+ 0.05	8.88
Trust Companies	7,081	0.17	5,301	0.12	8,860	0.22	+ 67.14	- 22.01	+ 16.06	+ 5.26	16.68
Stock & Bond Dealers	21,390	0.50	19,779	0.44	23,001	0.57	+ 16.29	- 41.78	+ 51.49	+ 1.32	16.51
Loan and Mortgage	6,190	0.15	7,336	0.16	5,045	0.13	- 31.22	- 35.94	- 18.69	- 2.73	9.67
Insurance	66,606	1.57	58,625	1.32	74,588	1.85	+ 27.23	- 19.74	+ 11.77	+ 2.48	11.81
Real Estate	202,396	4.77	210,538	4.73	194,254	4.81	- 7.73	- 38.47	+ 30.73	- 0.77	14.88
Government	465,060	10.96	418,936	9.41	511,185	12.67	+ 22.02	- 8.92	+ 42.11	+ 2.63	13.19
Professional	152,657	3.60	153,427	3.45	151,886	3.77	- 1.00	- 28.16	+ 24.41	- 0.15	9.75
Education	94,411	2.23	84,238	1.89	104,584	2.59	+ 24.15	- 5.52	+ 1.63	+ 2.26	9.67
Service, other	245,248	5.78	235,169	5.28	255,327	6.33	+ 8.57	- 23.29	+ 27.00	+ 0.65	7.68
	1,316,086	31.03	1,247,585	28.02	1,384,588	34.32	+ 10.98	- 20.31	+ 29.16	+ 1.21	8.49

NATIONAL INCOME OF CANADA 1919-1938

INTER-WAR EXPANSION OR DECLINE-ANNUAL AVERAGE INCREMENT OR DECREMENT

1926=100

Excluding Negative International Balance on Dividends and Interest

See Table 2

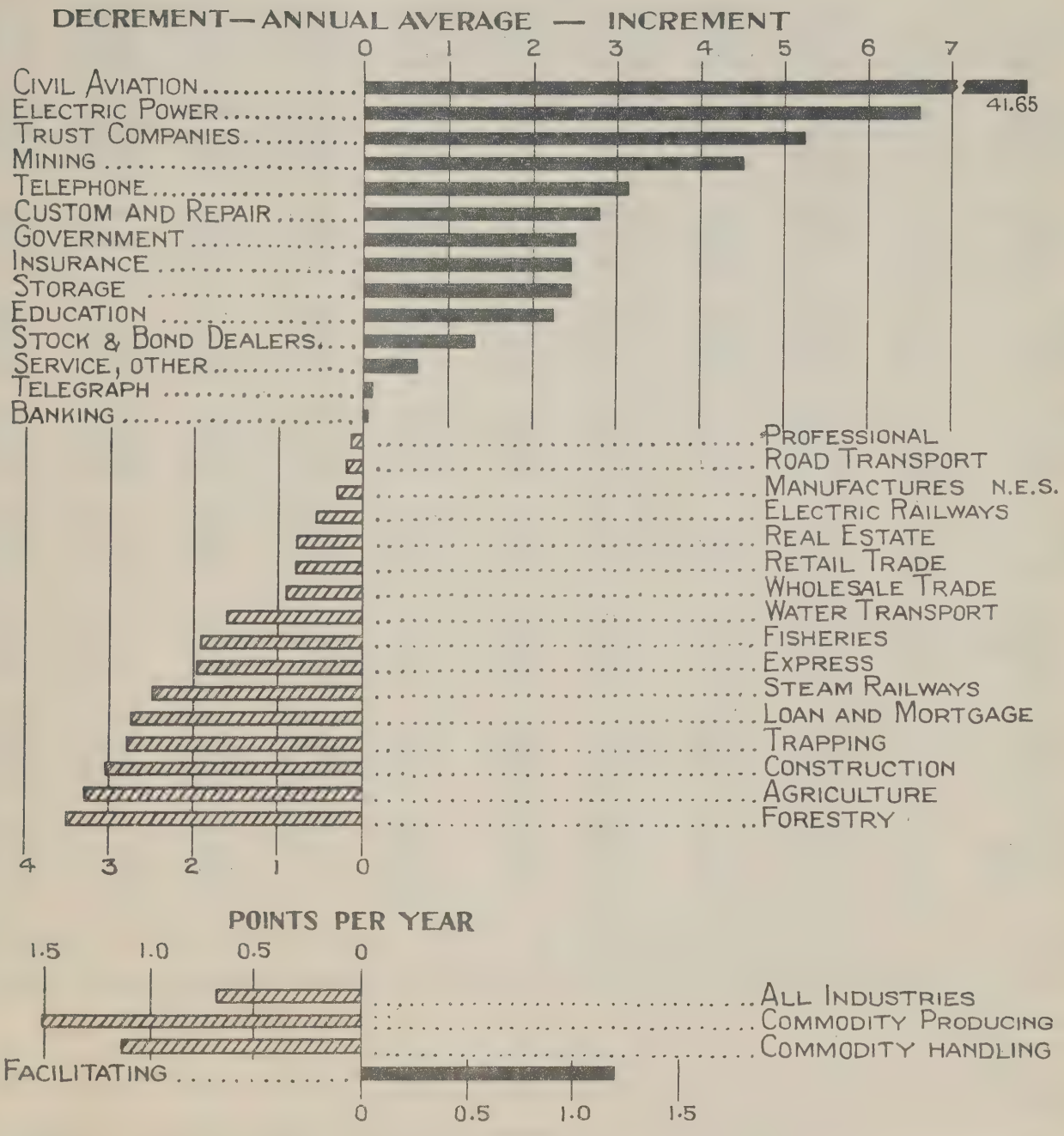
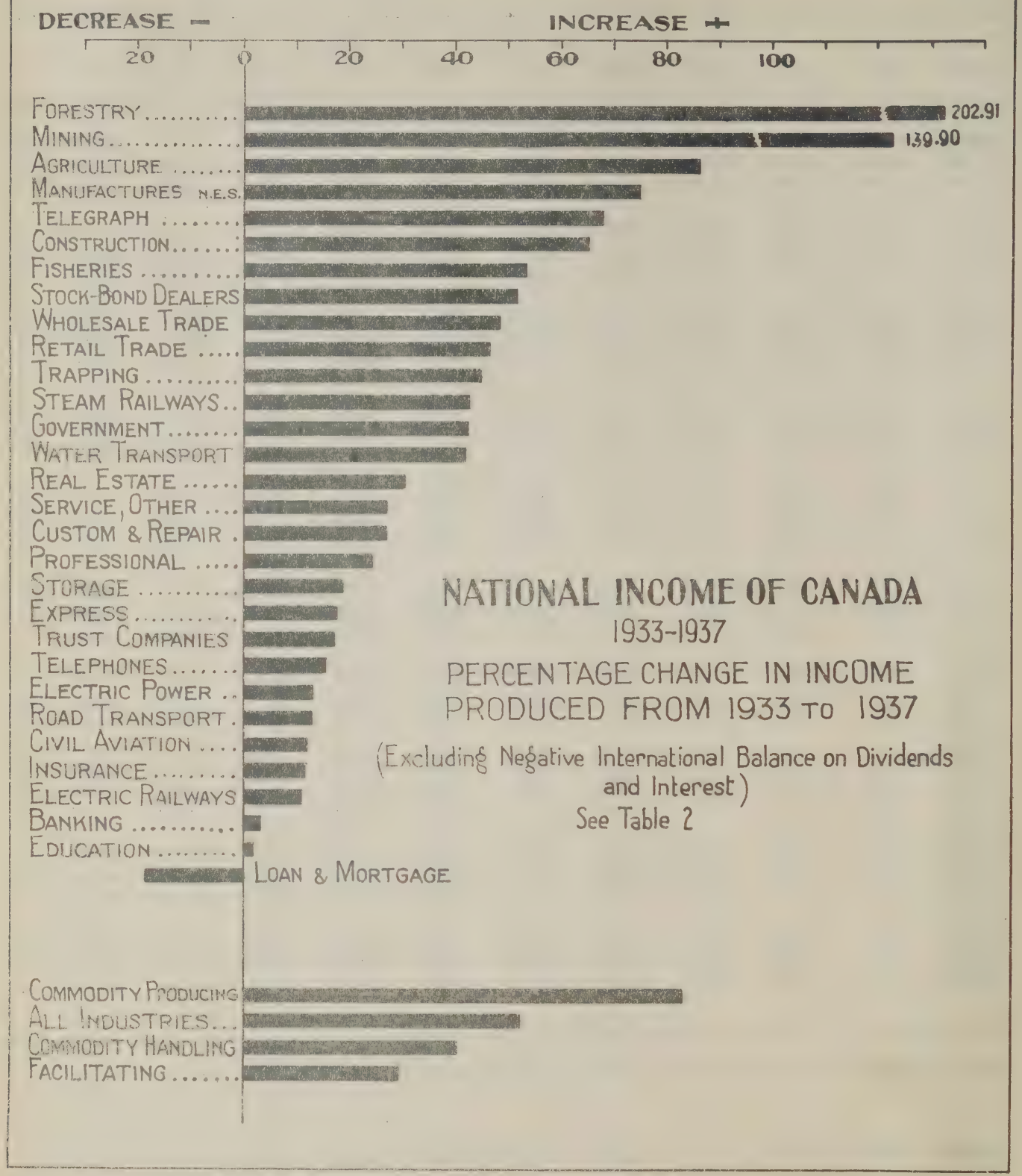


TABLE 3 - PRODUCTIVE SOURCES OF THE NATIONAL INCOME OF CANADA, IN THOUSAND DOLLARS, 1919 - 1938.

		1919	1920	1921	1922	1923	1924	1925	1926	1927
Agriculture	1	969,698	888,885	794,079	714,220	768,451	750,934	866,260	908,053	883,468
Forestry	2	230,978	271,832	138,045	151,747	188,791	182,060	181,693	190,958	189,065
Fisheries	3	41,141	34,314	23,246	29,717	30,688	31,896	34,483	40,775	35,324
Trapping	4	13,481	12,168	9,097	15,665	15,060	13,775	13,769	13,316	16,436
Mining	5	98,396	133,368	90,778	106,712	108,289	103,200	120,151	136,899	147,552
Manufactures, n.e.s.	6	723,127	794,586	525,547	519,195	572,613	536,933	568,747	640,511	719,691
Construction	7	195,900	261,400	183,500	199,800	207,700	193,100	196,000	217,200	242,600
Steam Railways	8	283,376	321,995	302,110	307,046	317,936	302,440	320,403	353,922	355,678
Electric Railways	9	27,763	31,858	30,393	35,640	35,535	35,266	35,246	36,696	38,896
Water Transport	10	36,148	46,600	40,909	42,271	39,191	41,318	42,885	45,635	52,764
Road Transport	11	33,131	39,425	33,848	34,646	33,427	32,870	30,190	32,863	34,119
Civil Aviation	12	148	194	206	233	290	222	135	163	265
Storage	13	3,135	3,033	3,005	3,076	3,186	3,257	3,437	3,602	3,563
Express	14	8,328	10,424	11,661	9,254	7,876	7,289	7,850	8,336	8,412
Telegraph	15	7,315	9,180	9,033	8,609	7,894	8,575	9,448	9,506	10,523
Telephone	16	21,305	23,543	25,826	26,583	27,048	27,314	28,357	34,099	38,059
Electric Power	17	27,419	31,518	33,247	36,191	39,016	43,068	49,301	59,416	66,272
Retail Trade	18	370,123	379,075	330,670	314,777	329,015	312,898	342,920	376,757	404,519
Wholesale Trade	19	197,801	200,403	148,758	155,927	161,238	166,980	186,960	212,763	203,266
Banking	20	52,158	59,166	54,591	50,647	50,432	49,841	52,413	54,166	57,717
Trust Companies	21	4,150	4,489	4,625	4,869	4,529	5,031	5,330	5,904	6,568
Stock & Bond Dealers	22	17,713	21,006	17,468	17,227	18,234	18,251	18,752	20,957	22,734
Loan and Mortgage	23	7,173	7,368	7,429	7,566	6,691	7,202	7,460	7,931	7,328
Insurance	24	47,026	53,981	45,385	45,302	47,586	56,987	65,977	68,503	76,989
Real Estate	25	171,670	182,073	193,553	209,784	215,251	220,907	223,240	223,578	228,242
Government	26	206,527	432,964	384,787	431,207	424,811	394,915	437,495	461,985	485,847
Professional	27	156,523	173,642	135,893	134,778	141,902	140,640	148,054	157,779	168,017
Education	28	54,450	64,800	76,550	82,775	87,200	89,825	92,650	94,575	97,715
Custom and Repair	29	34,910	42,995	42,631	43,517	45,463	47,027	48,557	53,473	58,329
Service, Other	30	220,599	249,448	228,752	214,643	222,021	231,830	232,930	240,955	248,899
Total of above, (1 to 30)	31	4,261,610	4,785,733	3,925,622	3,953,624	4,157,344	4,055,851	4,371,093	4,711,276	4,908,857
Negative International Balance on Dividends and Interest	32	174,300	171,800	191,000	191,200	212,000	201,700	209,600	217,700	226,500
National Income(31-32)	33	4,087,310	4,613,933	3,734,622	3,762,424	3,945,344	3,854,151	4,161,493	4,493,576	4,682,357

TABLE 3 - PRODUCTIVE SOURCES OF THE NATIONAL INCOME OF CANADA, IN THOUSAND DOLLARS, 1919 - 1938.

1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	
1,012,291	870,995	576,290	369,669	287,353	309,610	414,300	460,416	523,259	576,233	560,087	1
196,852	205,988	170,651	103,193	56,821	55,203	88,376	100,194	127,097	167,216	135,156	2
39,722	38,231	31,866	19,809	16,099	17,117	21,620	22,203	25,904	26,231	27,061	3
15,471	15,240	9,181	8,114	6,632	6,763	8,048	8,272	8,586	9,762	6,124	4
165,839	191,067	152,049	127,922	104,210	122,097	156,556	178,707	221,720	292,910	297,459	5
804,101	903,150	792,165	634,003	466,525	430,231	506,548	566,684	638,666	752,834	736,148	6
267,200	265,800	226,300	163,192	113,518	91,805	88,506	101,579	115,004	151,672	153,174	7
397,345	380,152	315,957	233,152	179,488	153,025	174,903	156,563	199,822	218,061	198,110	8
39,254	41,298	39,970	35,552	30,767	27,397	27,377	28,076	28,373	30,252	29,529	9
48,345	46,059	41,203	37,626	28,083	25,827	27,880	30,205	32,805	36,519	39,843	10
36,678	39,281	38,615	36,062	32,670	31,223	31,130	32,330	33,748	35,276	36,617	11
576	1,006	1,158	1,202	1,176	1,002	998	1,007	1,000	1,120	1,670	12
3,693	3,862	3,929	3,944	3,983	3,983	4,086	4,329	4,522	4,714	4,871	13
9,110	10,677	8,321	5,280	7,179	6,500	6,652	6,928	7,251	7,644	7,271	14
12,092	12,721	10,676	7,904	5,962	6,241	8,116	8,626	9,324	10,478	9,897	15
41,348	45,483	46,779	43,012	38,301	36,279	36,086	37,470	38,888	41,928	43,040	16
76,104	85,938	93,772	95,006	87,981	79,223	85,219	87,862	83,831	89,556	89,946	17
440,403	457,362	383,884	327,040	259,373	244,553	274,076	296,504	319,807	357,907	362,200	18
215,408	216,487	191,156	151,992	119,635	121,633	140,517	145,688	162,081	180,519	178,567	19
61,227	65,440	65,754	60,511	53,185	52,257	49,719	50,861	53,140	54,292	53,426	20
7,518	10,001	9,277	9,565	8,492	7,800	8,074	8,238	8,887	9,053	9,214	21
25,448	30,184	28,209	21,303	17,250	17,573	19,442	20,861	23,350	26,622	25,218	22
7,206	7,081	7,062	6,633	5,587	4,536	4,117	4,105	4,052	3,688	3,587	23
76,517	83,121	81,679	73,339	68,110	66,714	70,563	72,692	77,037	74,569	78,052	24
237,076	242,844	249,900	244,069	187,032	149,423	129,146	148,748	174,412	195,345	221,623	25
528,823	510,596	425,597	387,539	449,231	465,072	502,607	498,906	605,765	660,916	605,616	26
177,046	180,967	167,832	151,157	135,244	130,017	135,383	141,286	150,579	161,757	164,636	27
101,840	106,545	111,275	111,200	108,625	100,660	98,580	100,000	100,825	102,300	105,825	28
64,690	71,114	71,265	64,024	57,681	55,239	57,843	59,062	62,460	69,771	70,196	29
261,614	281,938	280,874	258,140	232,372	216,269	233,710	242,672	252,598	274,668	280,033	30
5,372,837	5,420,628	4,632,646	3,791,154	3,168,565	3,035,272	3,410,178	3,621,074	4,094,793	4,623,813	4,534,196	31
235,300	271,900	306,800	293,300	275,300	240,500	239,600	239,700	265,800	281,600	287,800	32
5,137,537	5,148,728	4,325,846	3,497,854	2,893,265	2,794,772	3,170,578	3,381,374	3,828,993	4,342,213	4,246,396	33



NATIONAL INCOME OF CANADA

1933-1937

PERCENTAGE CHANGE IN INCOME PRODUCED FROM 1933 TO 1937

(Excluding Negative International Balance on Dividends and Interest)

See Table 2

TABLE 4. - INCOME PRODUCED BY THE THREE ECONOMIC DIVISIONS, IN THOUSAND DOLLARS AND PERCENTAGES, 1919 - 1938

(Excluding Negative International Balance on Dividends and Interest)

Year	Total	Commodity Producing	Commodity Handling	Facilitating	Percentages			
					Total	Commodity Producing	Commodity Handling	Facilitating
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1919	4,261,610	2,335,050	988,571	937,989	100.0	54.8	23.2	22.0
20	4,785,733	2,471,066	1,065,730	1,248,937	100.0	51.6	22.3	26.1
21	3,925,622	1,840,170	936,419	1,149,033	100.0	46.9	23.8	29.3
22	3,963,624	1,816,764	938,062	1,198,798	100.0	46.0	23.7	30.3
23	4,157,344	1,976,071	962,616	1,218,657	100.0	47.5	23.2	29.3
24	4,055,851	1,901,993	938,429	1,215,429	100.0	46.9	23.1	30.0
25	4,371,093	2,078,961	1,007,831	1,284,301	100.0	47.6	23.0	29.4
26	4,711,276	2,260,601	1,114,342	1,336,333	100.0	48.0	23.6	28.4
27	4,908,857	2,358,737	1,150,064	1,400,056	100.0	48.1	23.4	28.5
28	5,372,837	2,642,270	1,244,252	1,486,315	100.0	49.2	23.2	27.6
29	5,420,628	2,647,523	1,254,388	1,518,717	100.0	48.8	23.2	28.0
30	4,632,646	2,123,539	1,081,648	1,427,459	100.0	45.8	23.4	30.8
31	3,791,154	1,584,932	882,766	1,323,456	100.0	41.8	23.3	34.9
32	3,168,565	1,196,820	706,617	1,265,128	100.0	37.8	22.3	39.9
33	3,035,272	1,167,288	657,663	1,210,321	100.0	38.5	21.7	39.8
34	3,410,178	1,427,016	731,821	1,251,341	100.0	41.8	21.5	36.7
35	3,621,074	1,584,979	747,726	1,288,369	100.0	43.8	20.6	35.6
36	4,094,793	1,806,527	837,621	1,450,645	100.0	43.9	20.4	35.7
37	4,623,813	2,136,185	924,418	1,563,210	100.0	46.2	20.0	33.8
38	4,534,196	2,075,351	911,615	1,547,230	100.0	45.8	20.1	34.1
Averages								
1919-1938	4,241,808	1,971,592	954,130	1,316,086	100.0	46.5	22.5	31.0
1919-1928	4,450,385	2,168,168	1,034,632	1,247,585	100.0	48.7	23.3	28.0
1929-1938	4,033,232	1,775,016	873,628	1,384,588	100.0	44.0	21.7	34.3
Changes								
1929-1938 / 1919-1928	- 417,153	- 393,152	- 161,004	+ 138,003	- 9.37	- 18.13	- 15.56	+ 10.98
1933 / 1929	-2,385,356	-1,480,235	- 596,725	- 308,396	- 44.01	- 55.91	- 47.57	- 20.31
1937 / 1933	+1,588,541	+ 968,897	+ 266,755	+ 352,889	+ 52.34	+ 83.00	+ 40.56	+ 29.16

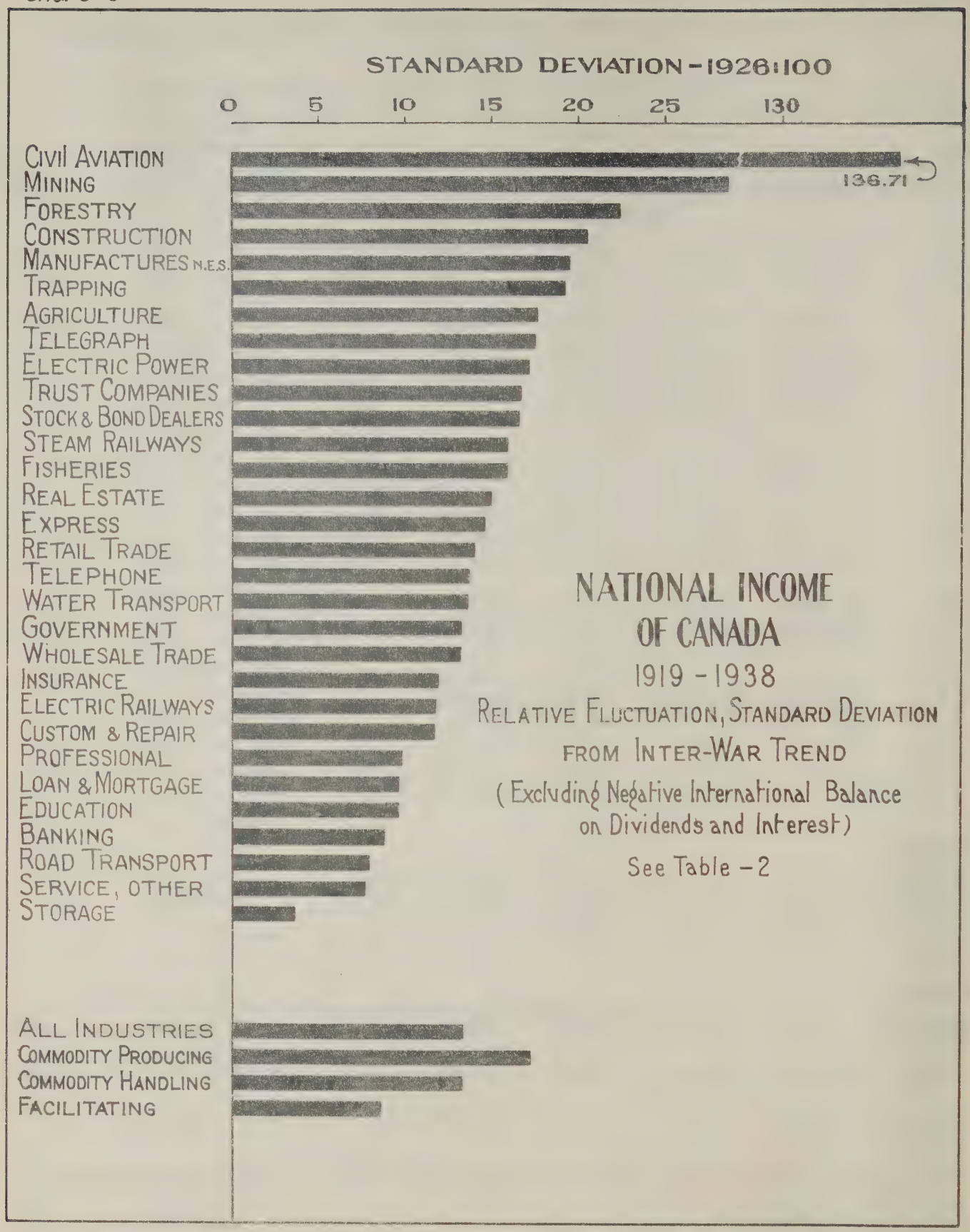

STANDARD DEVIATION - 1926=100
0
5
10
15
20
25
130
136.71
CIVIL AVIATION
MINING
FORESTRY
CONSTRUCTION
MANUFACTURES N.E.S.
TRAPPING
AGRICULTURE
TELEGRAPH
ELECTRIC POWER
TRUST COMPANIES
STOCK & BOND DEALERS
STEAM RAILWAYS
FISHERIES
REAL ESTATE
EXPRESS
RETAIL TRADE
TELEPHONE
WATER TRANSPORT
GOVERNMENT
WHOLESALE TRADE
INSURANCE
ELECTRIC RAILWAYS
CUSTOM & REPAIR
PROFESSIONAL
LOAN & MORTGAGE
EDUCATION
BANKING
ROAD TRANSPORT
SERVICE, OTHER
STORAGE
ALL INDUSTRIES
COMMODITY PRODUCING
COMMODITY HANDLING
FACILITATING
NATIONAL INCOME
OF CANADA
1919 - 1938
RELATIVE FLUCTUATION, STANDARD DEVIATION
FROM INTER-WAR TREND
(Excluding Negative International Balance
on Dividends and Interest)
See Table - 2

TABLE 5. - GROSS COMMODITY PRODUCTION OF NINE INDUSTRIAL GROUPS IN THOUSAND DOLLARS WITH APPROPRIATE DEDUCTIONS, 1919 - 1938

Year	Gross Production	Cost of Materials	Value Added (a-b)	Miscellaneous Expenses	Gross National Product (c-d)	Depreciation	[x] National Income Produced (e-f)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)
1919	5,945,443	2,860,953	3,084,490	507,605	2,576,885	241,835	2,335,050
20	6,689,867	3,372,320	3,317,547	582,075	2,735,472	264,406	2,471,066
21	4,908,731	2,261,731	2,647,000	552,460	2,094,540	254,370	1,840,170
22	4,628,584	2,049,850	2,578,734	511,957	2,066,777	250,013	1,816,764
23	4,974,949	2,212,379	2,762,570	532,579	2,229,991	253,920	1,976,071
24	4,939,914	2,256,135	2,683,779	520,448	2,163,331	261,338	1,901,993
25	5,362,986	2,467,591	2,895,395	550,681	2,344,714	265,753	2,078,961
26	5,776,699	2,638,964	3,137,735	606,867	2,530,868	270,267	2,260,601
27	6,134,322	2,848,626	3,285,696	645,576	2,640,120	281,383	2,358,737
28	6,668,612	3,017,706	3,650,906	707,725	2,943,181	300,911	2,642,270
29	6,985,592	3,283,769	3,701,823	738,763	2,963,060	315,537	2,647,523
30	5,770,539	2,664,866	3,105,673	658,020	2,447,653	324,114	2,123,539
31	4,442,832	1,999,519	2,443,313	549,575	1,893,738	308,806	1,584,932
32	3,554,317	1,615,010	1,939,307	454,637	1,484,670	287,850	1,196,820
33	3,487,650	1,598,210	1,889,440	440,698	1,448,742	281,454	1,167,288
34	4,127,917	1,933,662	2,194,255	491,899	1,702,356	275,340	1,427,016
35	4,488,848	2,128,600	2,360,248	507,518	1,852,730	267,751	1,584,979
36	5,078,546	2,431,263	2,647,283	560,197	2,087,086	280,559	1,806,527
37	5,954,440	2,907,930	3,046,510	623,591	2,422,919	286,734	2,136,185
38	5,625,073	2,674,408	2,950,665	589,798	2,360,867	285,516	2,075,351
Averages							
1919-1938	5,277,293	2,461,174	2,816,118	566,634	2,249,485	277,893	1,971,592
1919-1928	5,603,011	2,598,626	3,004,385	571,797	2,432,588	264,420	2,168,168
1929-1938	4,951,575	2,323,724	2,627,852	561,470	2,066,382	291,366	1,775,016
p.c. change	-11.63	-10.58	-12.53	- 1.81	-15.05	+10.19	-18.13

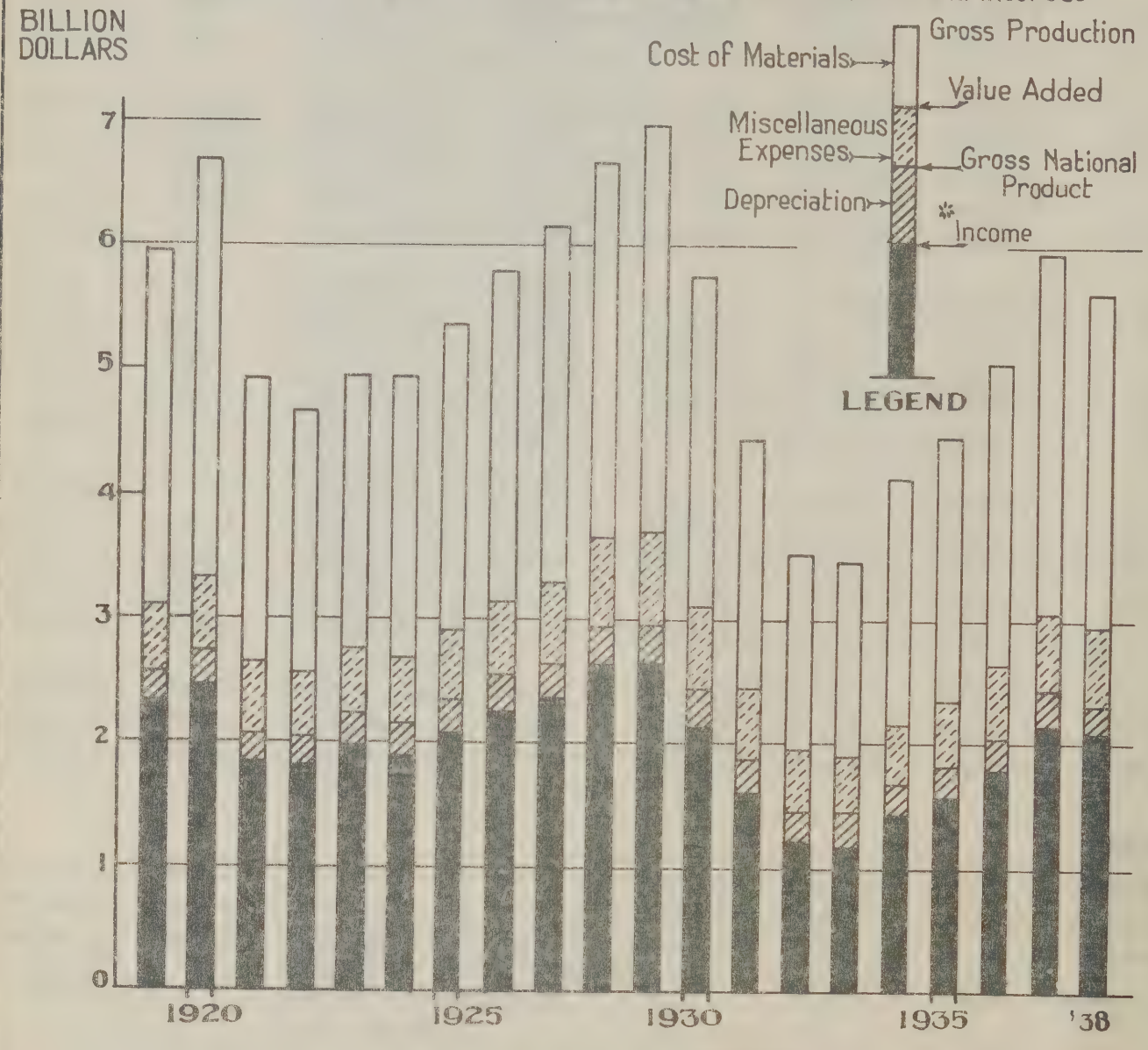
[x] Excluding negative international balance on dividends and interest.

NATIONAL INCOME OF CANADA 1919-1938

GROSS COMMODITY PRODUCTION WITH APPROPRIATE DEDUCTIONS

See Table 5

* Excluding Negative International Balance on Dividends and Interest



Section 3.

Types of Payment.

As income payments to individuals constitute the principal flow of money, the importance of these payments to the economy is readily realized. Money flow is in the main of a circular nature, the same dollars repeating the circuit time after time. The chief measurable flow of money is from producers to consumers in the form of consumer income. This money is received as a return for work in the form of wages and salaries, as a return from investments in the form of dividends, interest and rents, or as the withdrawals of working proprietors, representing a return from both work and investment. The disposal of the income either for services and the purchase of commodities for consumption or for investment leading to the expansion of plant and equipment, makes up the other segment of the circular flow. Both processes go on simultaneously and neither precedes the other as a necessary condition of production. Government is regarded as an enterprise rendering a wide variety of services in return for the taxes received. The money obtained through the sale of government securities is in a somewhat similar category to the borrowings of corporations for plant expansion and other purposes.

The individual's power of demand and consequent control over the economic activity of society is distributed and exercised approximately in proportion to the comparative magnitude of his income, or, to express it more strictly, in proportion to the magnitude of that portion of his income which is left at his disposal after the payment of taxes.

Positive and Negative Savings of Enterprises.

The amount of the disparity between the income produced, defined as the national income, and payments to individuals, is presented in Table 6 and Chart 11. The savings of enterprises are normally positive in prosperous years and negative in times of depression. Such organizations usually retain a portion of their net revenues in prosperous periods for the purpose of capital expansion or maintenance of dividend and interest payments when operations are less profitable. Governments strengthen their position by the reduction of outstanding obligations and in other ways. Rigidities, for example, in the form of essential miscellaneous expenses and fixed charges, and heavier social obligations in the case of governments, usually result in negative savings during the less propitious years.

When the thirty industrial groups are regarded as a unit, it is observed that savings of enterprises were mainly positive during the first decade, the only exception having been in 1921. Payments to individuals were greater than income produced from 1930 to 1935 inclusive, when the position took a turn for the better. Savings of enterprises are subject to extreme variation, ranging from $495 million in 1928 to a negative amount of $557 million in 1932. The cumulative gains in the first decade were nearly counterbalanced in the second, the algebraic sum of savings of enterprises for the twenty years amounting to only $3.4 million per annum.

The close conformity with general business conditions is evident from a comparison with other strategic factors. Provided it were possible to compute savings on a monthly basis, the information would be useful in the interpretation of economic conditions. Savings, positive or negative, are in themselves a highly

important consideration in shaping policies. A large negative saving in an economy dependent upon the stimulus of the profit incentive, is a potent factor in accentuating the severity of a depression, while positive savings have the opposite significance in a period of recovery.

Chart 18, on page 65 presents a summary of positive and negative savings of the twelve main groups by decades. Savings were positive for most groups during the first decade and negative in the second, although several exceptions to the general rule are noted. Excellent savings were retained by agriculture, manufactures, trade and government during the first decade, while in the second negative savings were substantial in agriculture, transportation and government. Care must be taken not to confuse the term "savings" used here with the common notion of business profits and losses. An enterprise retains a positive "saving" when it pays out in wages and salaries, interest dividends and other types of income received by individuals an amount smaller than the margin between its gross intake from industrial operations and the cost of materials, overhead and depreciation. On the other hand, an enterprise experiences a loss or negative saving when the amount of its payments to various income recipients is greater than that margin. Measurements are affected by the various methods of accounting practice. Considerable uncertainty also exists as to the distribution of withdrawals of working proprietors and savings. Owing to the lack of sufficient data, totals were made up to a certain extent by estimating and interpretation should be qualified accordingly.

Analysis of Income Payments.

In return for their participation in the production of goods and services, individuals receive compensation either in money or kind. If such money receipts and the value of perquisites are added, the resulting total constitutes the aggregate income payments to individuals. During any period the value of the end-product is rarely exactly equivalent to the compensation paid to the several agencies engaged in any given productive process. Consequently, the national income and aggregate payments to individuals are normally unequal.

As these types of income represent largely the compensation of various groups in the economic system, the importance of changes in the distribution will be recognized. Information as to the proportion of total income paid to each of the various factors of production at different periods is of considerable value in the interpretation of the structure of the Canadian economy.

The total flow of income payments to consumers amounted to an average of $4,002 million per year during the inter-war period. The average during the second decade was $3,939 million as against $4,065 million in the first, a decline of only $126 million or about 3 per cent. This minor setback in income payments as contrasted with the drop of more than 11 per cent in the national income was due to the marked variation in savings of enterprises. Income payments, owing to heavy negative savings, averaged $176 million per year more than income produced in the second decade, while payments to individuals were $183 million per annum less than income produced in the first decade. The nineteen-year trend of the index of income payments on the base of 1926 was minus 0.39 per year compared with minus 0.84 for the index of national income. (See Table 9).

A rough test of the magnitude of cyclical fluctuations is given by the percentage changes between typical years. The decline in income payments from 1929 to 1933 was more than 33 per cent, while the recovery from that low point to 1937 was nearly 31 per cent. The corresponding changes in the national income on a realized basis were a decline of 46 per cent and a rise of 55 per cent, respectively, indicating the greater sensitivity of the more inclusive total. The standard deviation of the index of income payments at 10.09 against 13.82 for income produced, tells a similar story with mathematical precision. (See Table 9).

Relative Position of Recipients.

It must be recognized that the total of income payments is nothing but the sum of innumerable separate incomes of individuals. This sum cannot be directly expressed in any measure giving the bulk, weight or number of the commodities or services, of which the incomes consist. It can only be reported in number of dollars arrived at as the aggregate amount of all the incomes. It often happens that the share of a participant is increased by something which makes no difference or at least only a slight difference to all the other participants. The various incomes are to a large extent independent of each other.

Also it should not be forgotten that the division between labour and property does not by itself settle the relative position of the owners and the workers. Much depends upon the number of persons who share the various types of income. The individual workers may be better off in comparison with the individual owners over a period when they are receiving in the aggregate a lesser proportion of the total. During the inter-war period the shares of wage-earners and property claimants increased contrasting with a minor decline in the relative position of enterprisers. It is evident, however, that the owners of such property as existed in our early history did not receive as large a proportion of the whole income as they do today. The relative position of the individual owner depends, of course, upon the diffusion of the ownership.

The form in which income was received by payees is indicated in Tables 8 and 9 (p.60) and Charts 12 and 13 (pp. 53 and 55).

Reviewing the twenty-year period, the compensation of employees, including pensions and relief, accounted for nearly 62 per cent of the total distribution, while less than 14 per cent was paid in the form of dividends, interest and rents. The share of the working proprietors averaged nearly 25 per cent. The decline in the share of the last category was the most striking feature. Labour's share, including other labour income, rose from about 60 per cent in the first decade to 63.3 per cent in the second, while the relative gain in property income was from 12.8 per cent to 14.7 per cent. The share of the working proprietors dropped from 27.2 per cent to 22.0 per cent, the income of farmers and other primary producers showing a considerable setback from the favourable position of the first decade.

An advancing inter-war trend was shown by other labour income including relief, as well as by bond interest and dividends. A declining trend was recorded in withdrawals and the sum of rentals and mortgage interest. Salaries and wages showed a slightly declining trend, while the proportion to income payments as a whole showed an increase in the second decade over the first.

Salaries and Wages.

Salaries and wages represent from one angle the greatest share in the distribution of the value which is produced in commerce and industry, and from another the greatest single factor in the purchasing power which represents consumers' demand for these values. Over the period under review employees as a whole have taken in payment for their services an average of over 58 per cent of the total income payments. In some industries the proportion has been much greater. It is estimated, for instance, that in the period from 1919 to 1938, the workers in manufactures received 81.8 per cent of the total income payments of that industry, those in transportation 71.3 per cent, in trade 65.1 per cent, and in service 60.6 per cent. Percentages to income payments received by residents of Canada would be even greater. Earnings thus represent by all odds the largest single share in income payments.

Similarly such earnings represent the largest share in purchasing power. This follows directly from the fact that they constitute the major proportion of all income. But the significance of wages as factors in consumers' demand for the products of industry is more direct because most of the wage-earners' income is usually spent for such products. The residue left for investment is normally of small proportions. In the higher income groups a much larger percentage of income is saved, and consumption may be delayed in periods when investment is restricted. Wages and salaries are the main income of the low per capita income groups. A change in earnings is directly reflected in the revenues of the lower income groups.

The payment of salaries and wages by three economic divisions from 1919 to 1938 is presented in Table 13 (p. 68) and Chart 19 (p. 67). The average salaries and wages of 30 groups for the twenty years and by decades are given in Table 15 (p.72). The upward trend in the facilitating division was unmistakeable, gains being general in the group totals for government, finance and service. Increases were also recorded in the mining, manufactures and electric power industries, forming a considerable part of the commodity-producing activities. Salaries and wages paid by the transportation and trade groups, on the other hand, were less in the second decade than in the first.

The relative importance of salaries and wages, as shown by Table 8 (p. 60) and Chart 13 (p. 55), varied considerably from year to year. The proportion to the total income payments was only about 53 per cent in the first year after the last war. During the next ten years, the employee class enjoyed an increasing proportion of the aggregate payments to individuals. Its relative importance declined from 1929 to 1933 but increased again to 1938.

The annual average of salaries and wages paid during the last decade was $2,320 million against $2,344 million in the 'twenties, a recession of 1.0 per cent. The twenty-year trend of the index of such payments was downward by 0.12 per annum. The decline from 1929 to 1933 was no less than 36.6 per cent, while the recovery from that low point to 1937 was 36.3 per cent. The standard deviation in the inter war period was 11.6 showing less variation than "other labour income", dividends or rentals and mortgage interest, but greater fluctuation than bond interest or withdrawals. (See Table 9, p. 60).

The purchasing power of salaries and wages paid during the period under review is set out in Table 11 (p. 64) and Chart 15 (p. 59) in terms of 1926 prices. The method is to divide the annual totals by the cost of living index based on 1926.

The result is a rough measure of the volume of purchases which could have been made from year to year by the recipient. The purchasing power was about $2.9 billion in 1929, but owing to the aggregate payments going down faster than the cost of living, the position deteriorated until 1933. The recovery was fairly rapid after that year, the total in 1937 having been placed at $3,020 million.

Other Labour Income.

The marked variability of other labour income is mainly due to the inclusion of government war gratuities and direct relief. The payment of workmen's compensation and pensions of various classes is more regular from year to year. Payments during the second decade averaged $171 million against $95 million in the first. The inter-war trend of the index showed an increment of 8.68 points per year. Owing to the heavy payments of war gratuities during 1919 and the extraordinary disbursements subsequent to 1930, the standard deviation reached the high mark of 87.60. These comparisons are shown in Table 9, (p. 60) and Chart 14 (p.57). The index of "other labour income" on the base of 1926 was 426.3 in 1919, reached a low point of 97 in 1925 and then climbed to 328 in 1937.

The proportion of other labour income to toal income payments was 7.2 per cent in 1919, receded to as low as 1.6 per cent in 1926 and then rose to 6.2 per cent in 1934. In the first year after the war, payments were $289 million, while a minimum of $66 million was reached in 1925. The total rose to $221 million in 1935, when direct relief was disbursed in large amount. Table 8 (p.60) and Chart 22 (p. 73) portray the marked changes in the account from 1919 to 1938.

When other labour income is combined with salaries and wages to make up the total remuneration of the employee class, an important alteration is noted in regard to the relative importance. The proportion going to the class in 1919 was about 60 per cent instead of the 53 per cent going as salaries and wages alone. From 1922 to 1930, the proportion of other labour income was fairly steady and the amount moderate. The heavy payments in relief during subsequent years tended to offset the relative decline in salaries and wages. In fact, the sum of salaries and wages and other labour income was a growing proportion of total income payments from 1930 to the end of the period under review.

Withdrawals of Working Proprietors.

The process of production, interpreted in a broad sense, is the centre of the nation's activities. The creative influences consist of man himself, the active principle in production, and the material environment which he uses or works upon in the enterprise. The human forces are broadly divisible, according to their functioning, into two groups, employees and working proprietors or enterprisers. The latter group occupies the pivotal position in the economic system. Their function is to initiate productive activities, co-ordinating labour and capital into a combination for the production of goods and services. They are responsible for the employment of men and capital, engaging them in profitable ways of meeting human needs.

As indicated in Tables 8 and 9, withdrawals of working proprietors occupy an intermediate position between the remuneration of employees and that of owners. The average annual income received by enterprisers during the

inter-war totalled $987 million against $2,465 million paid to the employee class and $550 million received by owners of property of different types. The proportions paid to six classes of recipients are portrayed in Chart 13 (p. 55). Withdrawals were about 24.7 per cent of total income payments during the entire period. This compares with 58.3 per cent in salaries and wages and 3.32 per cent in other labour income. The so-called property income amounted to 8.3 per cent in dividends and bond interest, and 5.4 per cent in rentals and mortgage interest. The proportion of dividends and interest was reduced by the considerable payment to external holders of securities issued in Canada.

Withdrawals vary greatly from one industrial group to another. They assume greatest importance in agriculture, service and trade. The withdrawals of the farmers of Canada during the inter-war period were estimated at $510.5 million per year, or nearly 52 per cent of the total for all industries. The service group, including those engaged in professional activities, distributed 17.7 per cent, while trade occupied third place with a distribution of 14 per cent. Other groups, notably construction, manufactures and the primary industries, paid considerable amounts to their working proprietors in the form of withdrawals. Such income was estimated for each of the twelve major groups except electric power and Government. The dividing line between the working proprietor, on the one hand, and the corporate officer and member of the board of directors on the other is not clearly drawn, but the aim of the present report was to restrict withdrawals to the unincorporated section of productive activities. Withdrawals, consequently, are important for but a few of the industrial groups included in the country's economic system. Most industries are organized largely on the principle of separation of ownership from active participation in the process of production.

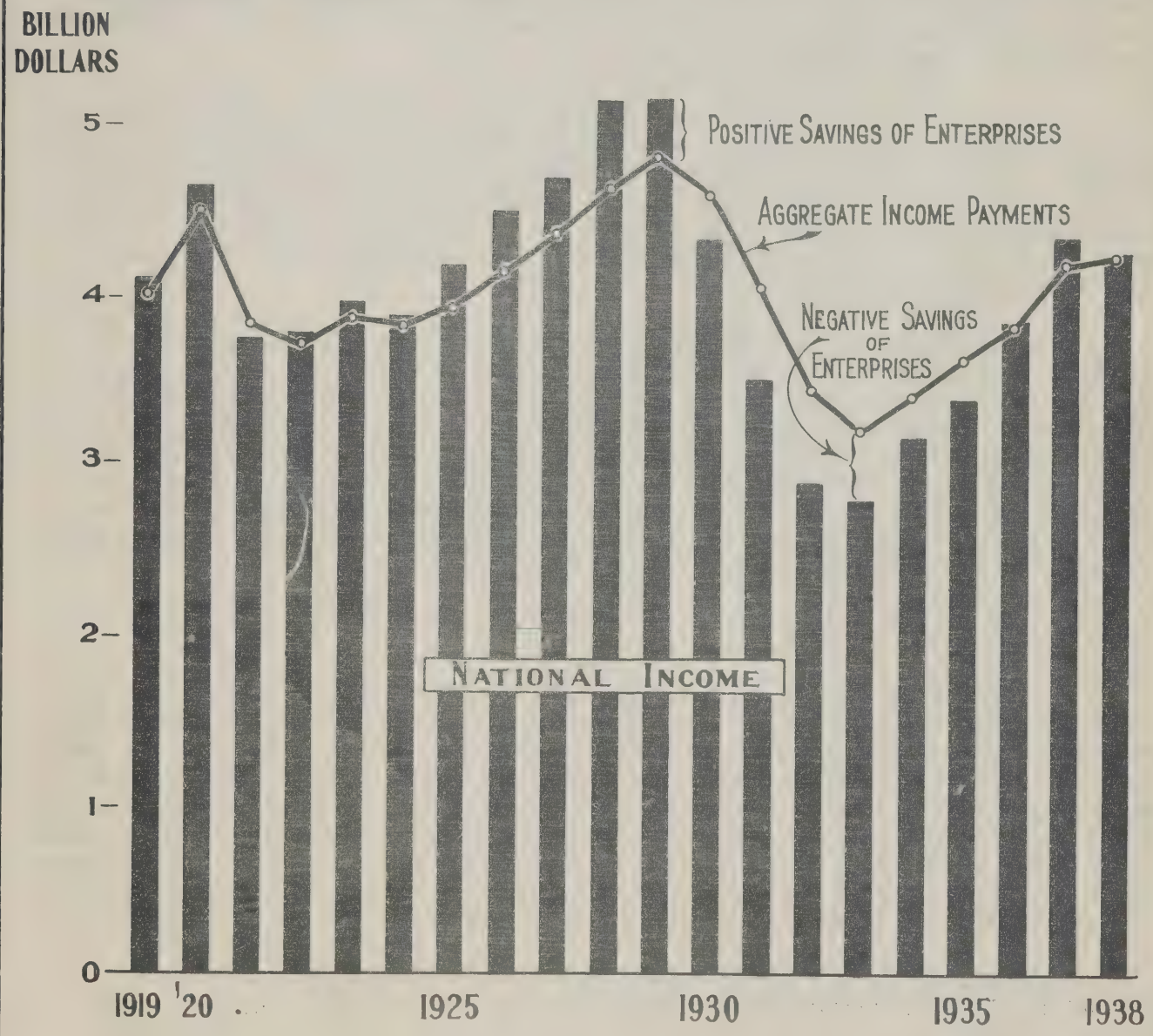
The prosperity of enterprisers over a period is dependent on conditions in the main industries from which the income is derived. The severe depression in primary industries, notably agriculture, accounted mainly for the declining trend of withdrawals during the last twenty years. The setback in the grand total from the first decade to the second amounted to about 21.5 per cent, the average of $1,106 million having declined to $868 million in the 'thirties. Among the commodity-producing activities, advance in mining, manufactures and repair work failed by a wide margin to counterbalance the declines in other industries. The reduced return for the personal activities of farmers made up a large part of the general decline. The withdrawals of the trade group declined 19 per cent from $153 million per year to $123.5 million. Financial activities are mainly carried on by incorporated companies, withdrawals in relatively small amount being calculated for real estate and stock and bond brokers. The rise in the return to professionals and working proprietors in "other service" was contrary to the prevalent trend. In view of these developments, withdrawals were of less relative importance as an income flow in the second decade than in the first, the decline being from 27 per cent of income payments to 22 per cent. The decline in the inter-war trend was 2.48 points of the index per year. The relative drop was greater than in salaries and wages or in the sum of rentals and mortgage interest, while other labour income, interest and dividends showed a rising trend.

NATIONAL INCOME OF CANADA 1919-1938

NATIONAL INCOME, AGGREGATE INCOME PAYMENTS AND SAVINGS OF ENTERPRISES

Including negative international balance on dividends and interest

See Table 6



Fluctuations.

While fluctuations in withdrawals are normally less than in earnings of employees, much depends on the relative sensitivity of the segments which disburse the income. Primary producers, including a large proportion of working proprietors, were severely affected during the major depression culminating in 1933. Contraction in withdrawals was most conspicuous in agriculture, which as shown in Chart 17 (p. 63), was the chief source of this type of income. Despite the relatively better showing in most groups, withdrawals declined 41 per cent from 1929 to 1933 against 36.6 per cent for salaries and wages. The recovery from 1933 to 1937 was 25.5 per cent in withdrawals and 36.3 per cent in earnings of employees. (See Table 9).

The test of the standard deviation, however, indicates that withdrawals were slightly less sensitive to fluctuations than salaries and wages, the standing being 11.06 against 11.55. Withdrawals, after reaching $1,330 million in 1920, dropped to $1,010 million in 1922. The recovery was fairly continuous to 1929, when an intermediate maximum of $1,186 million was reached. The low point of the second major depression was nearly $700 million recorded during 1933. Successive gains were then recorded until 1937. (See Table 8).

The withdrawals derived from commodity-producing activities declined from $817 million in 1929 to $432 million in 1933, representing 47.1 per cent. The other economic divisions showed greater resistance to the influences of depression. The commodity-handling division dropped from $183 million to $116 million, while the facilitating activities contributed $185 million in the prosperous year compared with $151 million in 1933. The net result was that as production proper lost some of its relative importance in the last decade, the withdrawals contributed by the facilitating industries tended to become a correspondingly larger proportion. (See Table 14 and Chart 21).

Property Income.

Property income, including dividends, bond and mortgage interest and rents, made up less than 14 per cent of the total flow of income to consumers. After adjustment for international payments, dividends amounted to 3.67 per cent and bond interest to 4.65 per cent during the twenty-year period under review. Mortgage interest and rents averaged 5.43 per cent. Salaries and wages, pensions, relief and withdrawals may be regarded as labour income, contrasted with dividends, interest and rents, assumed to constitute property income. On this basis approximately six-sevenths of income receipts of consumers can be attributed to receipts from labour and one-seventh to receipts from property.

Considerable difficulty attends the computation of property income. Many of the large corporations are engaged in varied activities complicating the classification of dividends and interest. The oil industry, for example, operates not only the refineries but a widespread system of retail distribution. Another problem is to differentiate between payments to corporations and to individuals. The aim was to arrive at the total of dividends and interest flowing to individuals. This was roughly achieved by deducting from payments the sum of the dividends and interest received by the corporations in each of

NATIONAL INCOME OF CANADA 1919-1938

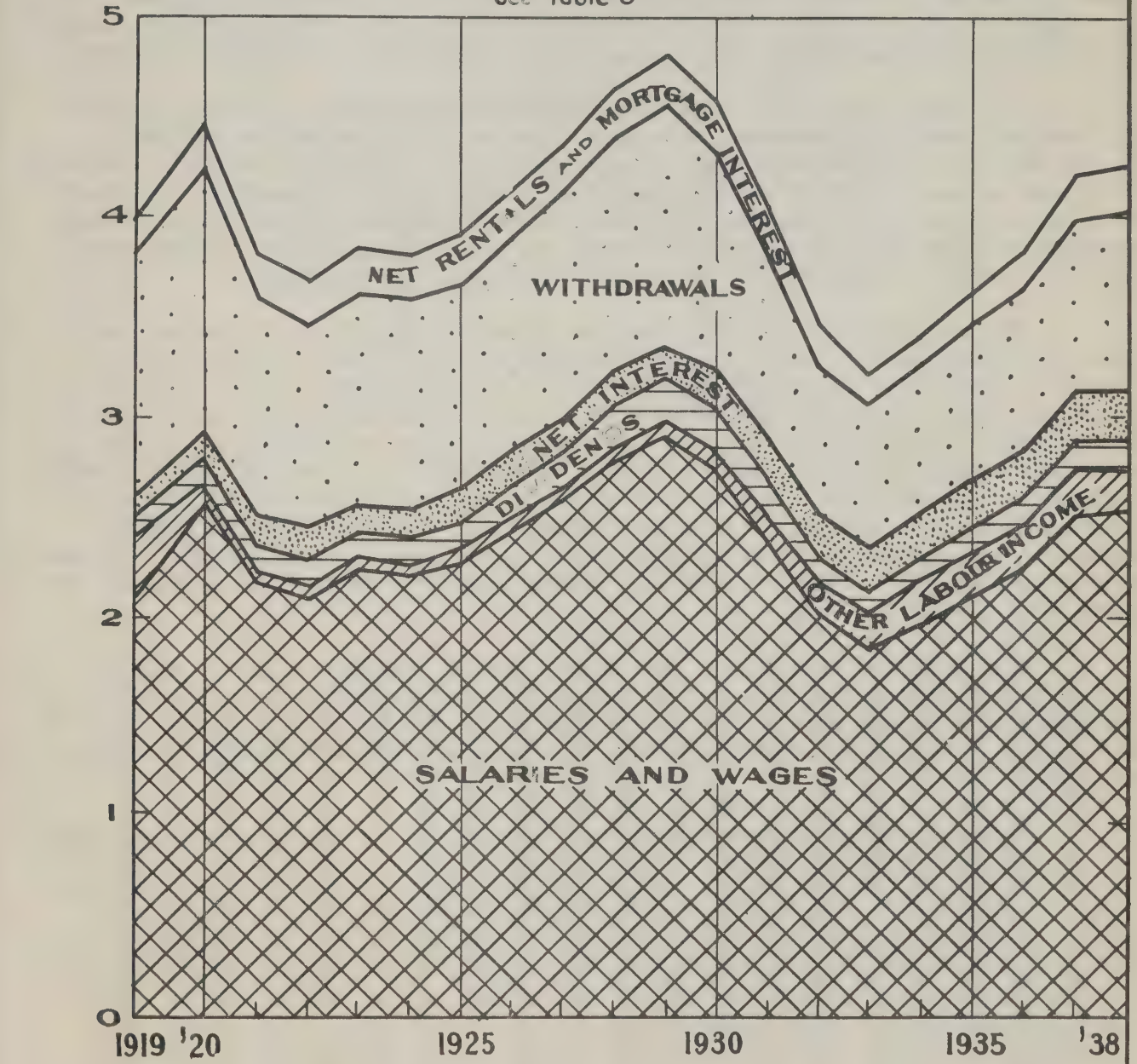
DISTRIBUTION OF AGGREGATE INCOME PAYMENTS

IN

CURRENT DOLLARS

(Including negative international balance on dividends and interest)

See Table 8



the groups. The amount of dividend payments received by individuals is consequently computed by adding together the net total originating by groups.

A portion of these payments accrue to individuals indirectly through financial institutions including banks and insurance companies. These organizations are treated in this connection as associations of individuals for the purpose of a better management of personal savings. The flow of income in the form of dividends and interest may thus be divided into two unequal streams, the larger flowing directly into the hands of individuals and the other flowing to finaicial institutions to be eventually transferred to individual consumers.

The large amount of dividend and interest payments to external holders of Canadian securities presents a serious problem in estimating the national income and its distribution. Due to inadequate data, the distribution of payments by groups between internal and external recipients may be computed with approximate accuracy only. A considerable part of the tables and charts in the present report are based upon the produced version of the national income, rather than upon the realized basis as far as Canadian residents are concerned.

By comparing the averages for the second decade of the inter-war period with the first we find that an upward trend was shown in the flow of property income. Payments to Canadian residents rose from an average of $521 million in the first ten-year period to $579 million, a gain of 11 per cent. Charts 20 and 22 indicate that the advancing trend in property income reflected mainly the important increase in bond interest. A slight advance was recorded in dividend payments while the sum of rentals and mortgage interest was at a lower level in the last ten years. The gain in bond interest and dividends from the first decade to the second was 45.2 per cent and 10.1 per cent, respectively. The real estate account of rentals and mortgage interest, on the other hand, declined about 10.5 per cent.

Owing to the decline in labour and working-proprietor income and the rising trend of property income, the latter recorded growing importance in the last decade. The proportion of total income disbursed to individuals was 14.7 per cent in the last ten years, against 12.8 per cent in the first part of the period.

Property income showed decline in agriculture and forestry but recorded an increase in mining and electric power, the marked development of the latter industries being a partial explanation. The estimate of property income originating in manufactures n.e.s. rose from an average of $65 million in the first decade to nearly $86 million in the second. A minor advance was shown in the sum of transportation and communication activities, the telephone payments offsetting the decline in steam railways. The finance group, embracing non-farm rents whether paid or imputed and mortgage interest as well as dividends and interest from banking and other financial groups, disbursed less income in the last ten years. The advance in payments by governments reflected the growth of public debts. Increases were also recorded by the trade and service activities.

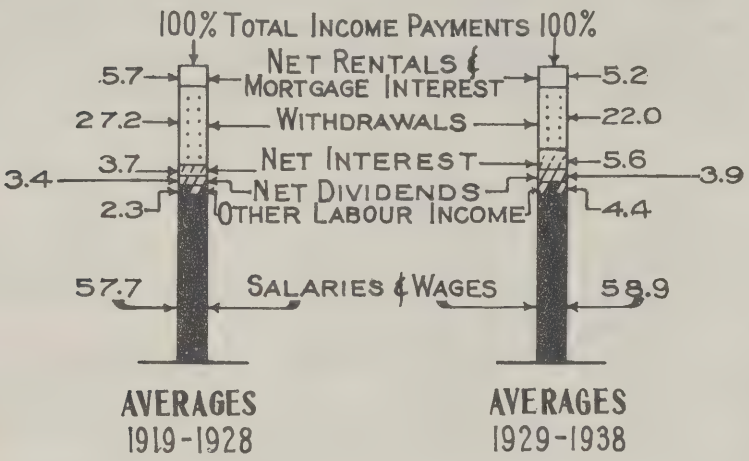
The trend of property income and its main constituents are presented in Tables 8, 9 and 15 and Charts 17, 20 and 22.

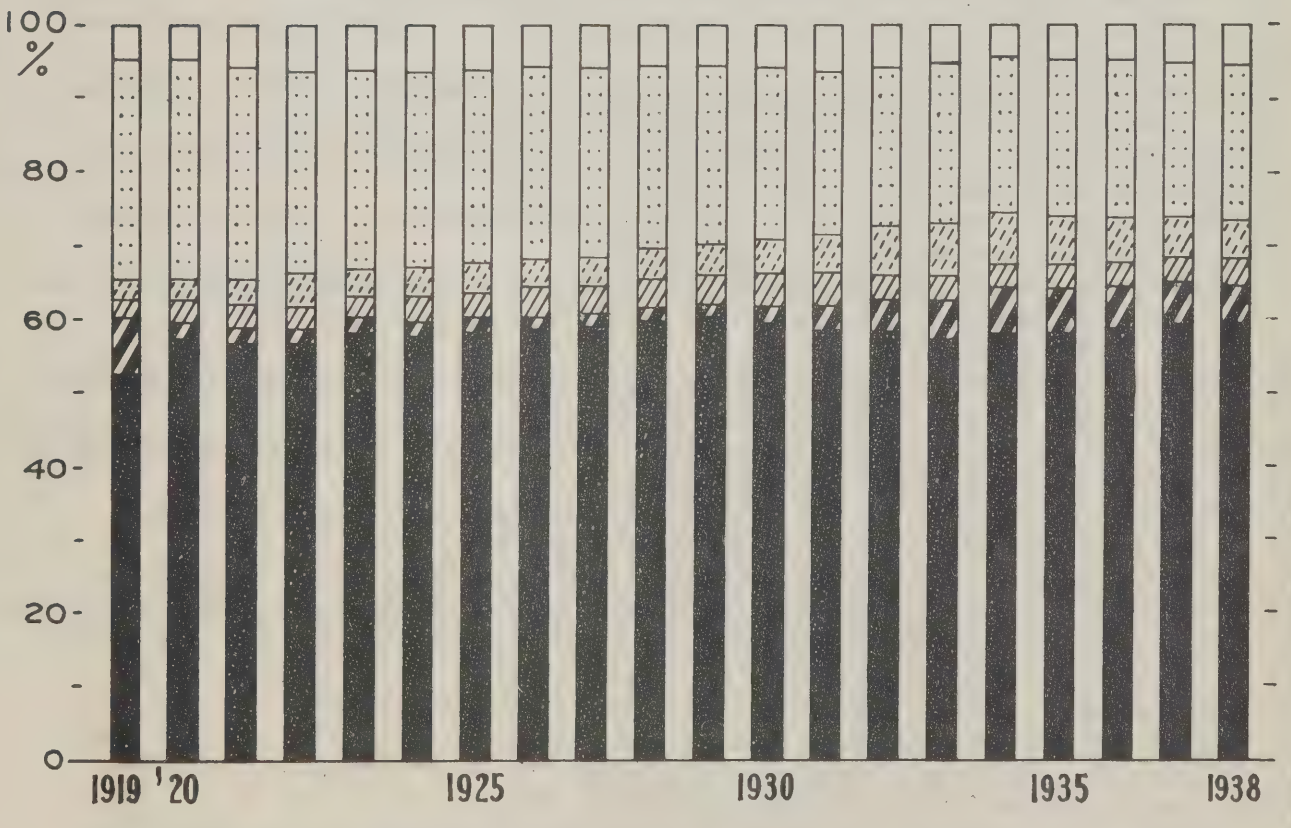
NATIONAL INCOME OF CANADA 1919-1938

PERCENTAGE DISTRIBUTION OF INCOME PAYMENTS BY TYPES OF PAYMENTS

(Including Negative International Balance on Dividends and Interest)

See Tables 8 and 9





Fluctuations.

Dividends were the most elastic of the three main components of property income, dropping from $210 million in 1930 to $107 million in 1933. The standard deviation in the inter-war period was 18.3 compared with 7.6 for bond interest and 13.9 for rentals and mortgage interest. Interest payments, denoting fixed charges, represent one of the more rigid items in the price structure. Their behaviour during the depression showed marked variation. Dividends recorded a decline of 44.6 per cent from 1929 to 1933, while realized net interest showed an increase of 24.2 per cent. The change from 1933 to 1937 was an increase of nearly 49 per cent in dividends and a decline of 2.8 per cent in interest. The decline in the real estate property income was 37.4 per cent during the reaction, while a gain of 28.5 per cent was shown in the subsequent recovery to 1937. (Table 9.)

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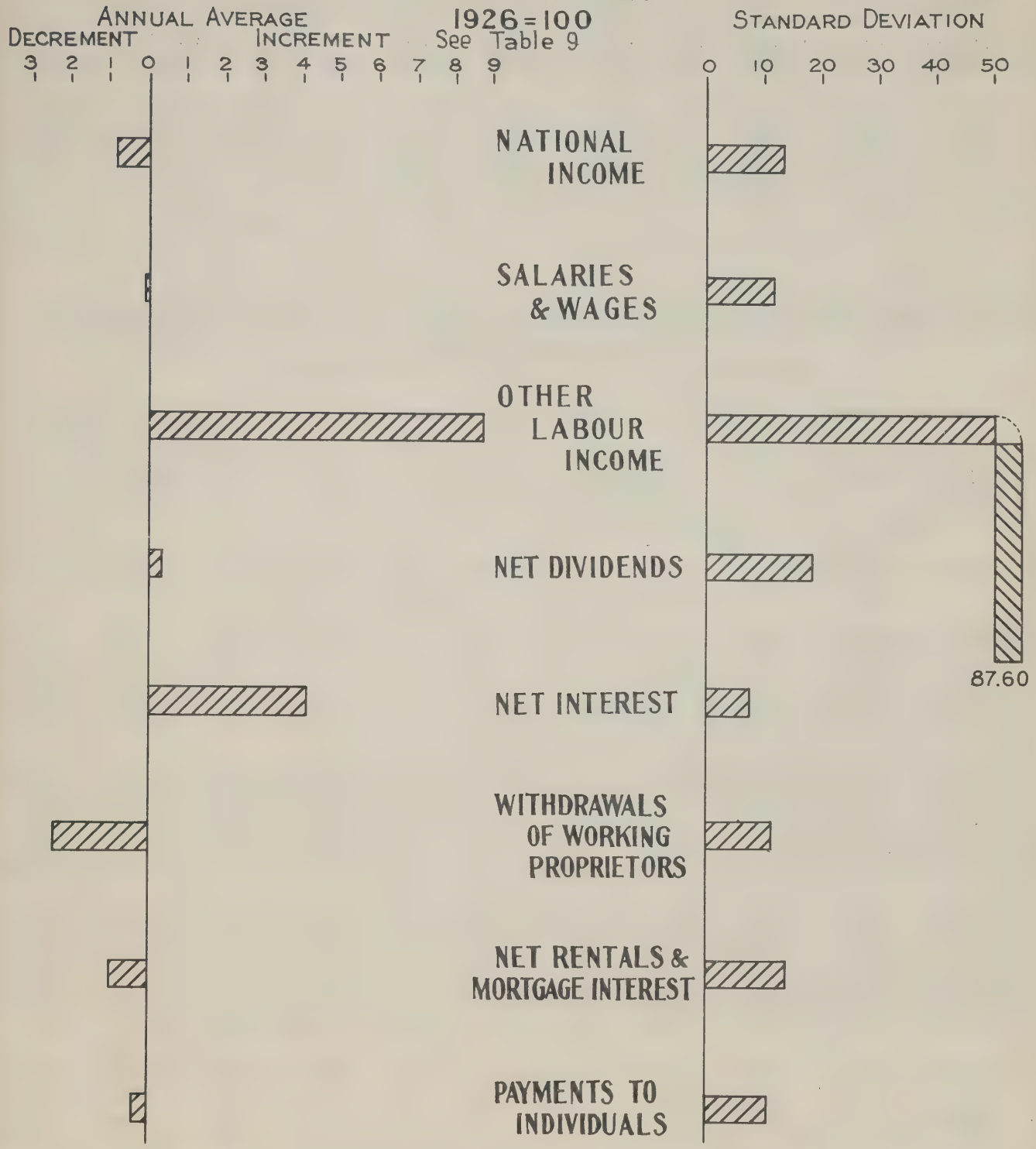
NATIONAL INCOME OF CANADA 1919-1938

INTER-WAR EXPANSION OR DECLINE AND RELATIVE FLUCTUATION OF TYPES OF PAYMENT*



* Including negative international balance on dividends and interest

TABLE 6. - NATIONAL INCOME PRODUCED, AGGREGATE INCOME PAYMENTS AND SAVINGS OF ENTERPRISES, IN THOUSAND DOLLARS.

1919 - 1938

(Including negative international balance on dividends and interest)

Year	Aggregate Income Produced	Aggregate Income Payments	Positive or Negative Savings	Year	Aggregate Income Produced	Aggregate Income Payments	Positive or Negative Savings	Year	Aggregate Income Produced	Aggregate Income Payments	Positive or Negative Savings
	(a)	(b)	(c)		(a)	(b)	(c)		(a)	(b)	(c)
1919	4,087,310	3,987,837	+ 99,473	1926	4,493,576	4,142,572	+ 351,004	1933	2,794,772	3,212,220	- 417,448
20	4,613,933	4,460,061	+ 153,872	27	4,682,357	4,362,912	+ 319,445	34	3,170,578	3,400,314	- 229,736
21	3,734,622	3,802,253	- 67,631	28	5,137,537	4,642,649	+ 494,888	35	3,381,374	3,627,138	- 245,764
22	3,762,424	3,686,618	+ 75,806	29	5,148,728	4,810,249	+ 338,479	36	3,828,993	3,822,828	+ 6,165
23	3,945,344	3,838,607	+ 106,737	30	4,325,846	4,578,579	- 252,733	37	4,342,213	4,200,251	+ 141,962
24	3,854,151	3,815,730	+ 38,421	31	3,497,854	4,041,077	- 543,223	38	4,246,396	4,244,685	+ 1,711
25	4,161,493	3,908,301	+ 253,192	32	2,893,265	3,450,492	- 557,227				

TABLE 7. - AGGREGATE INCOME PAYMENTS, DISTRIBUTION BY ECONOMIC DIVISIONS IN CURRENT PRICES, PERCENTAGES AND PRICES OF 1926, IN THOUSAND DOLLARS, 1919 - 1938

(Excluding negative international balance on dividends and interest)

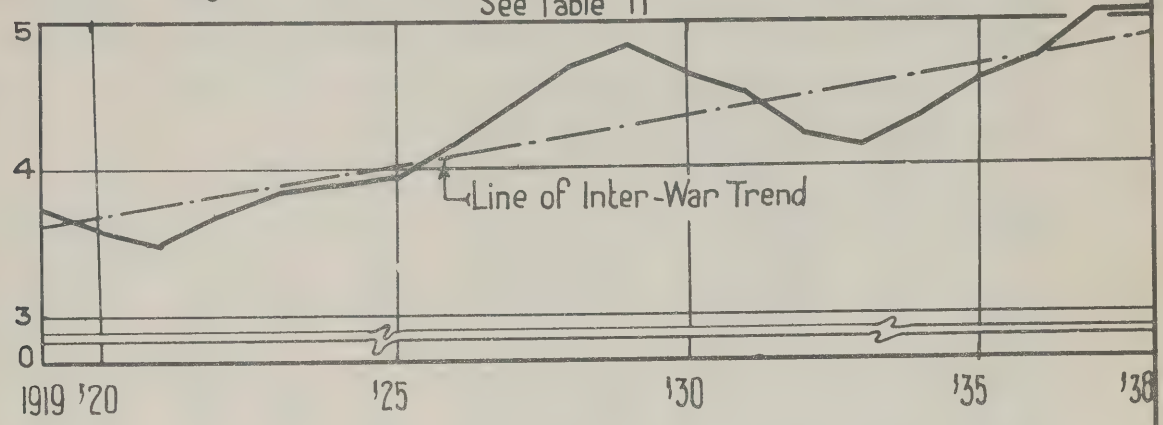
Year	Current Prices				Percentages			Cost of Living Index 1926= 100	Prices of 1926			
	Aggregate Income Payments	Commodity Producing	Commodity Handling	Facilitating	Com. Prod.	Com. Hand'g	Facil'g		Aggregate Income Payments	Commodity Producing	Commodity Handling	Facilitating
1919	4,162,137	1,994,461	937,510	1,230,166	47.9	22.5	29.6	107.2	3,882,590	1,860,505	874,543	1,147,542
20	4,631,861	2,358,230	1,103,661	1,169,970	50.9	23.8	25.3	124.2	3,729,356	1,898,736	888,618	942,004
21	3,993,253	1,870,533	1,009,260	1,113,460	46.8	25.3	27.9	109.2	3,656,825	1,712,942	924,231	1,019,652
22	3,877,818	1,783,246	969,098	1,125,474	46.0	25.0	29.0	100.0	3,877,818	1,783,246	969,098	1,125,474
23	4,050,607	1,921,075	966,913	1,162,619	47.4	23.9	28.7	100.0	4,050,607	1,921,075	966,913	1,162,619
24	4,017,430	1,867,940	962,808	1,186,682	46.5	24.0	29.5	98.0	4,099,419	1,906,061	982,457	1,210,901
25	4,117,901	1,920,488	982,451	1,214,962	46.6	23.9	29.5	99.3	4,146,928	1,934,026	989,376	1,223,526
26	4,360,272	2,071,098	1,040,627	1,248,547	47.5	23.9	28.6	100.0	4,360,272	2,071,098	1,040,627	1,248,547
27	4,589,412	2,183,109	1,111,420	1,294,883	47.6	24.2	28.2	98.4	4,664,036	2,218,606	1,129,492	1,315,938
28	4,877,949	2,332,152	1,189,569	1,356,228	47.8	24.4	27.8	98.9	4,932,202	2,358,091	1,202,799	1,371,312
29	5,082,149	2,437,405	1,229,626	1,415,118	48.0	24.2	27.8	99.9	5,087,236	2,439,845	1,230,857	1,416,534
30	4,885,379	2,277,949	1,139,394	1,468,036	46.6	23.3	30.1	99.2	4,924,780	2,296,321	1,148,583	1,479,876
31	4,334,377	1,871,367	1,010,617	1,452,193	43.2	23.3	33.5	89.6	4,837,472	2,088,578	1,128,144	1,620,750
32	3,725,792	1,525,799	837,393	1,362,600	41.0	22.5	36.5	81.3	4,582,769	1,876,751	1,030,004	1,676,014
33	3,452,720	1,400,787	766,675	1,285,258	40.6	22.2	37.2	77.5	4,455,124	1,807,468	989,258	1,658,398
34	3,639,914	1,509,298	793,211	1,337,405	41.5	21.8	36.7	78.6	4,630,935	1,920,227	1,009,175	1,701,533
35	3,866,838	1,643,556	845,211	1,378,071	42.5	21.9	35.6	79.1	4,888,546	2,077,821	1,068,535	1,742,190
36	4,088,628	1,776,128	886,088	1,426,412	43.4	21.7	34.9	80.8	5,060,184	2,198,179	1,096,644	1,765,361
37	4,481,851	2,038,344	941,616	1,501,891	45.5	21.0	33.5	83.1	5,393,321	2,452,880	1,133,112	1,807,329
38	4,532,485	2,044,205	970,130	1,518,150	45.1	21.4	33.5	84.1	5,389,401	2,430,684	1,153,544	1,805,173

NATIONAL INCOME OF CANADA 1919-1938

TREND AND DISTRIBUTION OF AGGREGATE INCOME PAYMENTS IN PRICES OF 1926

(Inclusive of Negative International Balance on Dividends and Interest)

See Table 11



BILLION $

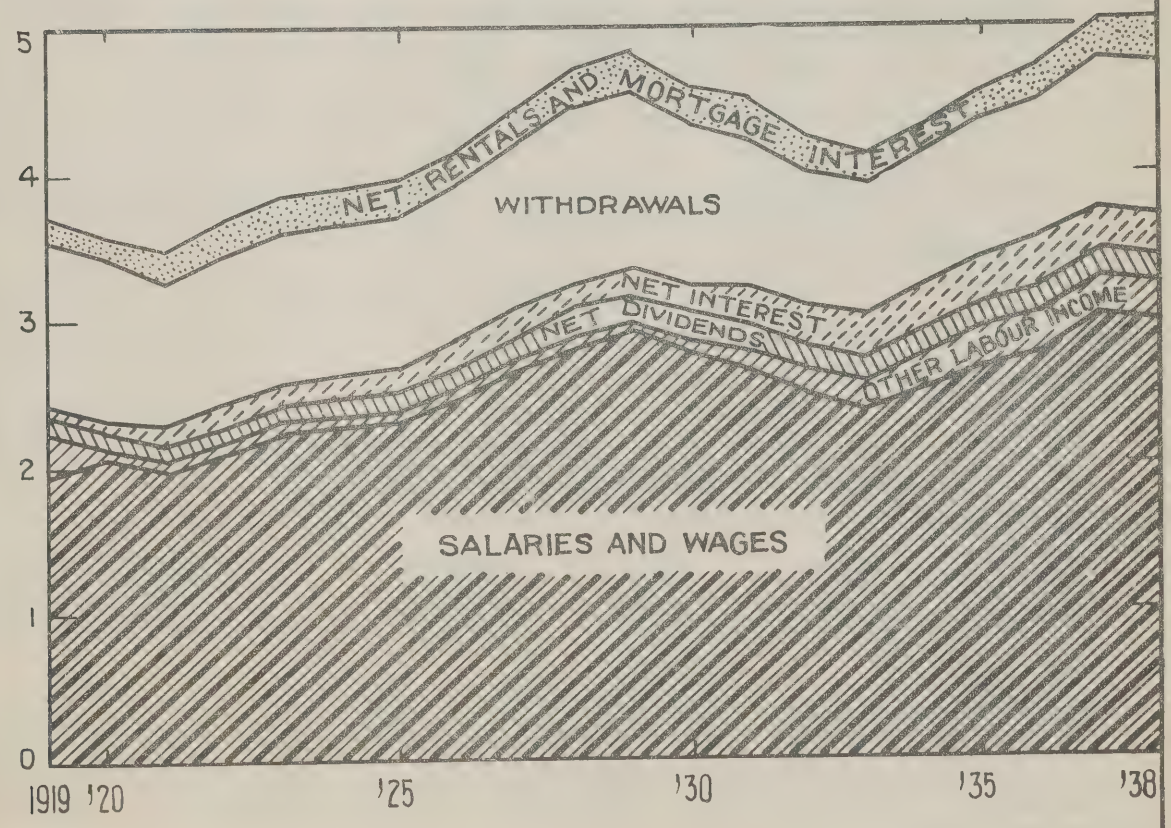


TABLE 8. - DISTRIBUTION OF AGGREGATE INCOME PAYMENTS BY TYPES OF PAYMENT IN CURRENT DOLLARS AND PERCENTAGES, 1919 - 1938.

(Including negative international balance on dividends and interest)

Year	Current Dollars in Thousands							Percentages					
	Total	Salaries and Wages	Other Labour Income	Net Dividends	Net Interest	Withdrawals	Net Rentals and Mortgage Interest	Salaries and Wages	Other Labour Income	Net Dividends	Net Interest	Withdrawals	Net Rentals and Mortgage Interest
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(b)	(c)	(d)	(e)	(f)	(g)
1919	3,987,837	2,104,072	289,106	111,788	98,334	1,196,565	187,972	52.8	7.2	2.8	2.5	30.0	4.7
20	4,460,061	2,554,744	100,123	137,707	133,551	1,330,166	203,770	57.3	2.2	3.1	3.0	29.8	4.6
21	3,802,253	2,163,999	75,648	115,767	144,588	1,085,889	216,362	56.9	2.0	3.0	3.8	28.6	5.7
22	3,686,618	2,093,032	65,710	122,675	161,857	1,009,960	233,384	56.8	1.8	3.3	4.4	27.4	6.3
23	3,838,607	2,239,756	66,614	117,848	140,693	1,036,630	237,066	58.4	1.7	3.1	3.7	27.0	6.1
24	3,815,730	2,210,259	66,398	128,444	154,185	1,015,343	241,101	57.9	1.7	3.4	4.1	26.6	6.3
25	3,908,301	2,273,712	65,816	136,586	166,800	1,024,275	241,112	58.2	1.7	3.5	4.3	26.2	6.1
26	4,142,572	2,434,437	67,822	164,989	168,079	1,067,971	239,274	58.8	1.6	4.0	4.0	25.8	5.8
27	4,362,912	2,586,796	72,076	163,261	174,259	1,123,930	242,590	59.3	1.7	3.7	4.0	25.8	5.5
28	4,642,649	2,776,610	78,760	195,000	175,143	1,164,565	252,571	59.8	1.7	4.2	3.8	25.1	5.4
29	4,810,249	2,904,939	83,204	193,610	186,470	1,186,303	255,723	60.4	1.7	4.0	3.9	24.7	5.3
30	4,578,579	2,728,484	99,607	210,000	200,096	1,076,892	263,500	59.6	2.2	4.6	4.4	23.5	5.7
31	4,041,077	2,366,658	129,546	189,000	203,360	897,314	255,199	58.6	3.2	4.7	5.0	22.2	6.3
32	3,450,492	2,007,935	155,378	125,866	226,159	737,345	197,809	58.2	4.5	3.7	6.5	21.4	5.7
33	3,212,220	1,840,496	173,134	107,200	231,663	699,698	160,029	57.3	5.4	3.3	7.2	21.8	5.0
34	3,400,314	1,972,815	210,678	113,600	235,358	727,054	140,809	58.0	6.2	3.3	6.9	21.4	4.2
35	3,627,138	2,107,543	220,525	131,500	239,391	769,141	159,038	58.1	6.1	3.6	6.6	21.2	4.4
36	3,822,828	2,242,678	214,561	138,100	229,673	812,091	185,725	58.7	5.6	3.6	6.0	21.2	4.9
37	4,200,251	2,509,281	222,451	159,700	225,227	877,911	205,681	59.7	5.3	3.8	5.4	20.9	4.9
38	4,244,685	2,522,882	202,135	166,800	226,300	896,365	230,203	59.4	4.8	3.9	5.4	21.1	5.4

TABLE 9. - NATIONAL INCOME AND RELATIVE IMPORTANCE, TREND AND FLUCTUATION OF TYPES OF PAYMENT, 1919 - 1938.

(Including negative international balance on dividends and interest)

	National Income	Salaries and Wages	Other Labour Income	Net Dividends	Net Interest	Withdrawals	Net Rentals and Mortgage Interest	Total Income Payments
Annual Averages, Thousand Dollars								
1919 - 1938	4,005,138	2,332,057	132,965	146,472	186,059	986,770	217,446	4,001,769
1919 - 1928	4,247,275	2,343,742	94,807	139,407	151,749	1,105,529	229,520	4,064,754
1929 - 1938	3,763,002	2,320,371	171,122	153,538	220,370	868,011	205,372	3,938,784
P. C. of Income Payments								
1919 - 1938		58.27	3.32	3.67	4.65	24.66	5.43	100.00
1919 - 1928		57.66	2.33	3.43	3.73	27.20	5.65	100.00
1929 - 1938		58.91	4.34	3.90	5.60	22.04	5.21	100.00
P. C. Changes								
1929 - 1938 / 1919 - 1928	- 11.40	- 1.00	+ 80.50	+ 10.14	+ 45.22	- 21.48	- 10.52	- 3.10
1933 / 1929	- 45.72	- 36.64	+108.08	- 44.63	+ 24.24	- 41.02	- 37.42	- 33.21
1937 / 1933	+ 55.37	+ 36.34	+ 28.48	+ 48.97	- 2.78	+ 25.47	+ 28.53	+ 30.73
Twenty Year Trend, Annual Change 1926 = 100	- 0.84	- 0.12	+ 8.68	+ 0.36	+ 4.11	- 2.48	- 1.02	- 0.39
Standard Deviation 1926 = 100	13.82	11.55	87.60	18.27	7.59	11.06	13.94	10.09

NATIONAL INCOME OF CANADA 1919-1938

AVERAGE INCOME PAYMENTS IN CURRENT DOLLARS BY TWELVE GROUPS OF THE CANADIAN ECONOMY 1919-1938

(Exclusive of Negative International Balance on Dividends and Interest)

	INCOME PAYMENTS		
	S.W. & O.L.I.	WITHDRAWALS	PROPERTY
	($ 000)	($ 000)	($ 000)
AGRICULTURE	143,319	510,545	26,756
FORESTRY	125,267	9,209	21,628
FISHING-TRAPPING	10,838	26,546	210
MINING	99,428	6,285	41,131
MANUFACTURES N.E.S.	518,613	36,115	75,543
CONSTRUCTION	117,638	55,410	426
ELECTRIC POWER	21,060		40,765
TRANSPORT & COMMUN.	350,065	18,306	108,258
TRADE	331,261	138,330	38,454
FINANCE	120,849	11,004	219,941
GOVERNMENT	291,956		176,182
SERVICE	334,728	175,019	37,354

LEGEND

Salaries, Wages and Other Labour Income

Withdrawals

Property (Net dividends and Interest, Net rentals & Mortgage interest)

See Table 15

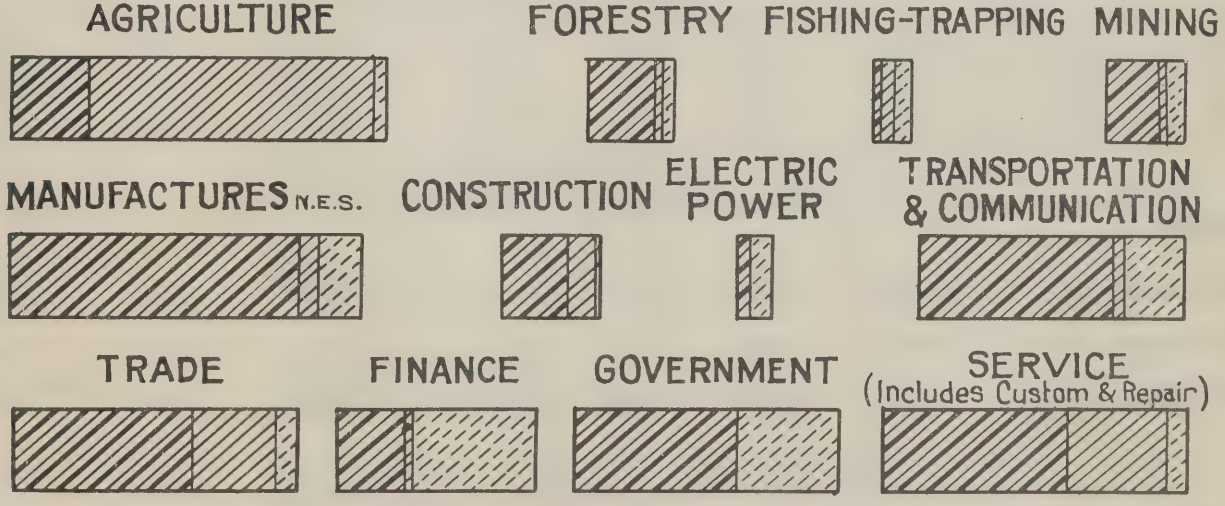


TABLE 10. - NATIONAL INCOME, AGGREGATE INCOME PAYMENTS AND TYPES OF PAYMENT, 1919 - 1938, EXPRESSED AS A PERCENTAGE OF 1926.

(Including negative international balance on dividends and interest)

Year	Aggregate Income Payments	Salaries and Wages	Other Labour Income	Net Dividends	Net Interest	Withdrawals	Net Rentals and Mortgage Interest	National Income
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1919	96.3	86.4	426.3	67.8	58.5	112.0	78.6	91.0
20	107.7	104.9	147.1	83.5	79.5	124.6	85.2	102.7
21	91.8	88.9	111.5	70.2	86.0	101.7	90.4	83.1
22	89.0	86.0	96.9	74.4	96.3	94.6	97.5	83.7
23	92.7	92.0	98.2	71.4	83.7	97.1	99.1	87.8
24	92.1	90.8	97.9	77.9	91.7	95.1	100.8	85.8
25	94.3	93.4	97.0	82.8	99.2	95.9	100.8	92.6
26	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
27	105.3	106.3	106.3	99.0	103.7	105.2	101.4	104.2
28	112.1	114.1	116.1	118.2	104.2	109.0	105.6	114.3
29	116.1	119.3	122.7	117.3	110.9	111.1	106.9	114.6
30	110.5	112.1	146.9	127.3	119.0	100.8	110.1	96.3
31	97.5	97.2	191.0	114.6	121.0	84.0	106.7	77.8
32	83.3	82.5	229.1	76.3	134.6	69.0	82.7	64.4
33	77.5	75.6	255.3	65.0	137.8	65.5	66.9	62.2
34	82.1	81.0	310.6	68.9	140.0	68.1	58.8	70.6
35	87.6	86.6	325.2	79.7	142.4	72.0	66.5	75.2
36	92.3	92.1	316.4	83.7	136.6	76.0	77.6	85.2
37	101.4	103.1	328.0	96.8	134.0	82.2	86.0	96.6
38	102.5	103.6	298.0	101.1	134.6	83.9	96.2	94.5
Averages								
1919 - 1938	96.6	95.8	196.0	88.8	110.7	92.4	90.9	89.1
1919 - 1928	98.1	96.3	139.8	84.5	90.3	103.5	95.9	94.5
1929 - 1938	95.1	95.3	252.3	93.1	131.1	81.3	85.8	83.7

NATIONAL INCOME OF CANADA 1919-1938

ANNUAL AVERAGE INCOME PAYMENTS IN CURRENT PRICES BY TWELVE GROUPS 1919-1928 AND 1929-1938

(Exclusive of Negative International Balance on Dividends and Interest)

See Table 12

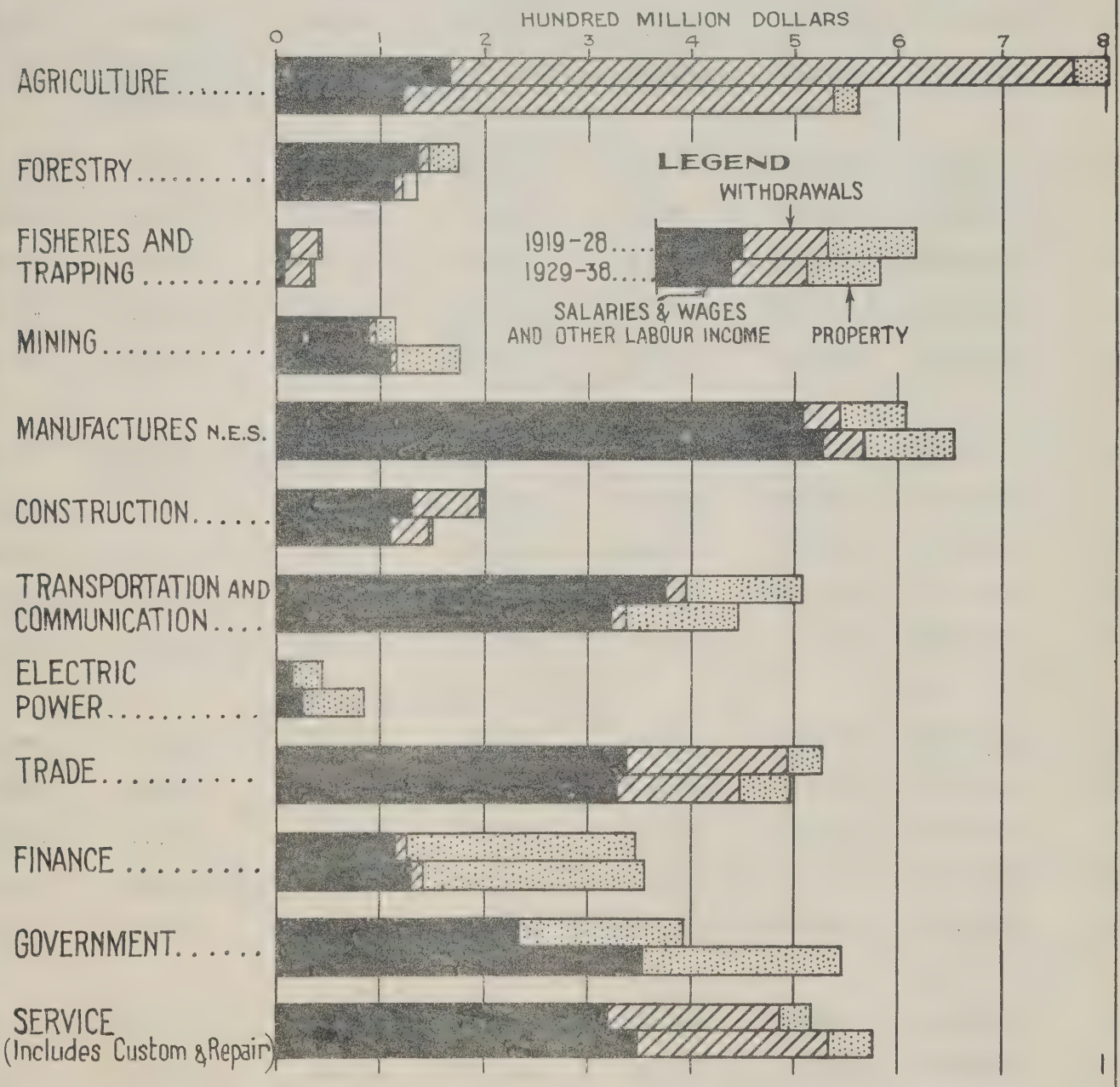


TABLE 11. - PURCHASING POWER OF AGGREGATE INCOME PAYMENTS BY TYPE OF PAYMENT, IN THOUSAND DOLLARS, IN PRICES OF 1926, 1919 - 1938.

(Including negative international balance on dividends and interest)

Year	Aggregate	Salaries and Wages	Other Labour Income	Net Dividends	Net Interest	Withdrawals	Net Rentals and Mortgage Interest
1919	3,719,997	1,962,754	269,688	104,280	91,729	1,116,199	175,347
20	3,591,031	2,056,960	80,614	110,875	107,529	1,070,987	164,066
21	3,481,917	1,981,684	69,275	106,014	132,407	994,404	198,133
22	3,686,618	2,093,032	65,710	122,675	161,857	1,009,960	233,384
23	3,838,607	2,239,756	66,614	117,848	140,693	1,036,630	237,066
24	3,893,602	2,255,366	67,753	131,065	157,332	1,036,064	246,022
25	3,935,852	2,289,740	66,280	137,549	167,976	1,031,495	242,812
26	4,142,572	2,434,437	67,822	164,989	168,079	1,067,971	239,274
27	4,433,853	2,628,858	73,248	165,916	177,092	1,142,205	246,534
28	4,694,286	2,807,492	79,636	197,169	177,091	1,177,518	255,380
29	4,815,064	2,907,847	83,287	193,804	186,657	1,187,490	255,979
30	4,615,503	2,750,488	100,410	211,694	201,709	1,085,577	265,625
31	4,510,130	2,641,359	144,583	210,937	226,964	1,001,467	284,820
32	4,244,148	2,469,785	191,118	154,817	278,178	906,943	243,307
33	4,144,800	2,374,834	223,399	138,322	298,920	902,836	206,489
34	4,326,099	2,509,943	268,038	144,529	299,438	925,005	179,146
35	4,585,509	2,664,403	278,793	166,245	302,643	972,365	201,060
36	4,731,223	2,775,592	265,545	170,916	284,249	1,005,063	229,858
37	5,054,454	3,019,592	267,691	192,178	271,032	1,056,451	247,510
38	5,047,188	2,999,860	240,352	198,335	269,084	1,065,832	273,725

NATIONAL INCOME OF CANADA 1919-1938

POSITIVE OR NEGATIVE SAVINGS OF ECONOMIC DIVISIONS AND TWELVE INDUSTRIAL OR SERVICE GROUPS 1918-1928 AND 1929-1938

(Excluding negative international balance on dividends and interest)

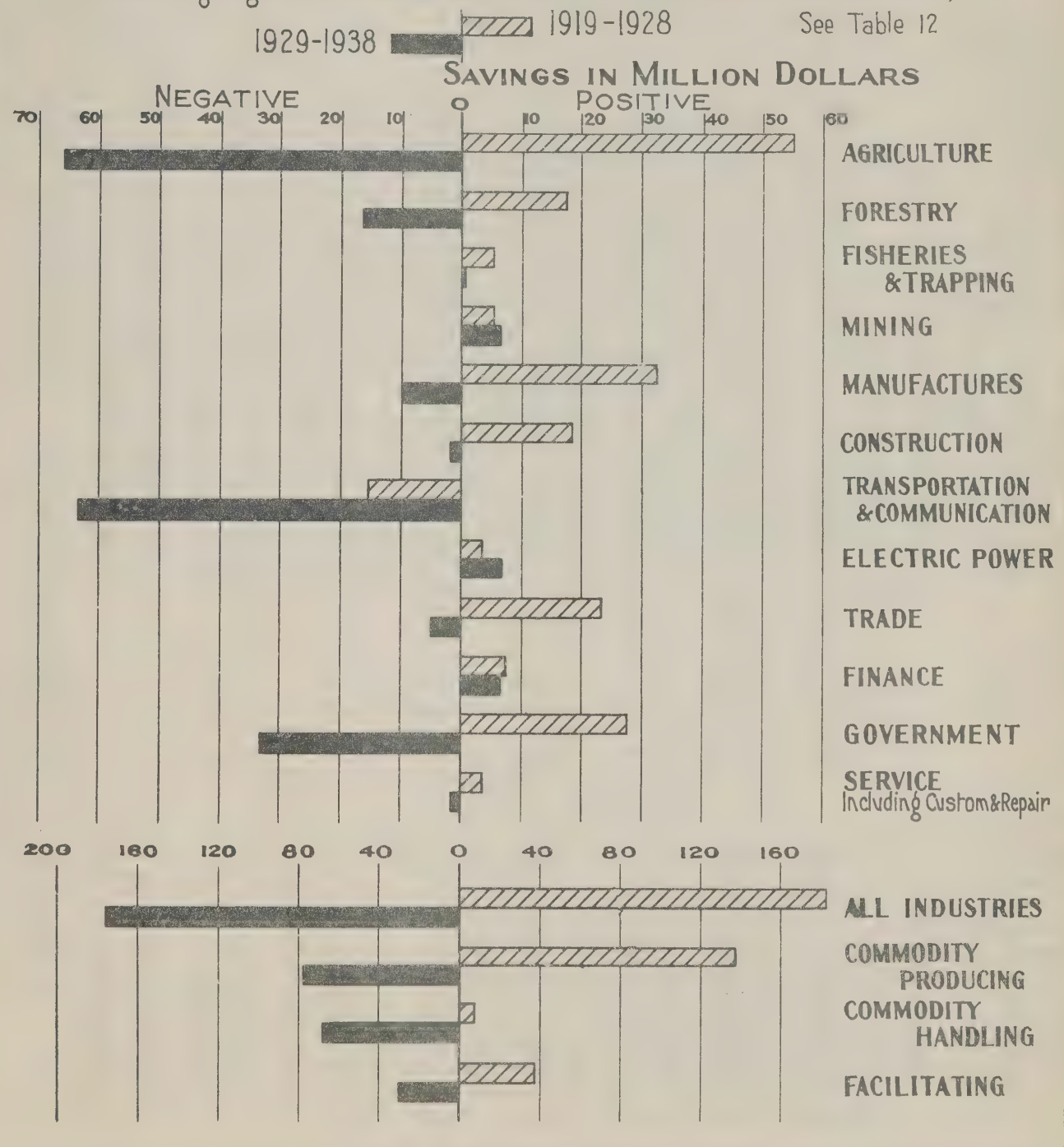


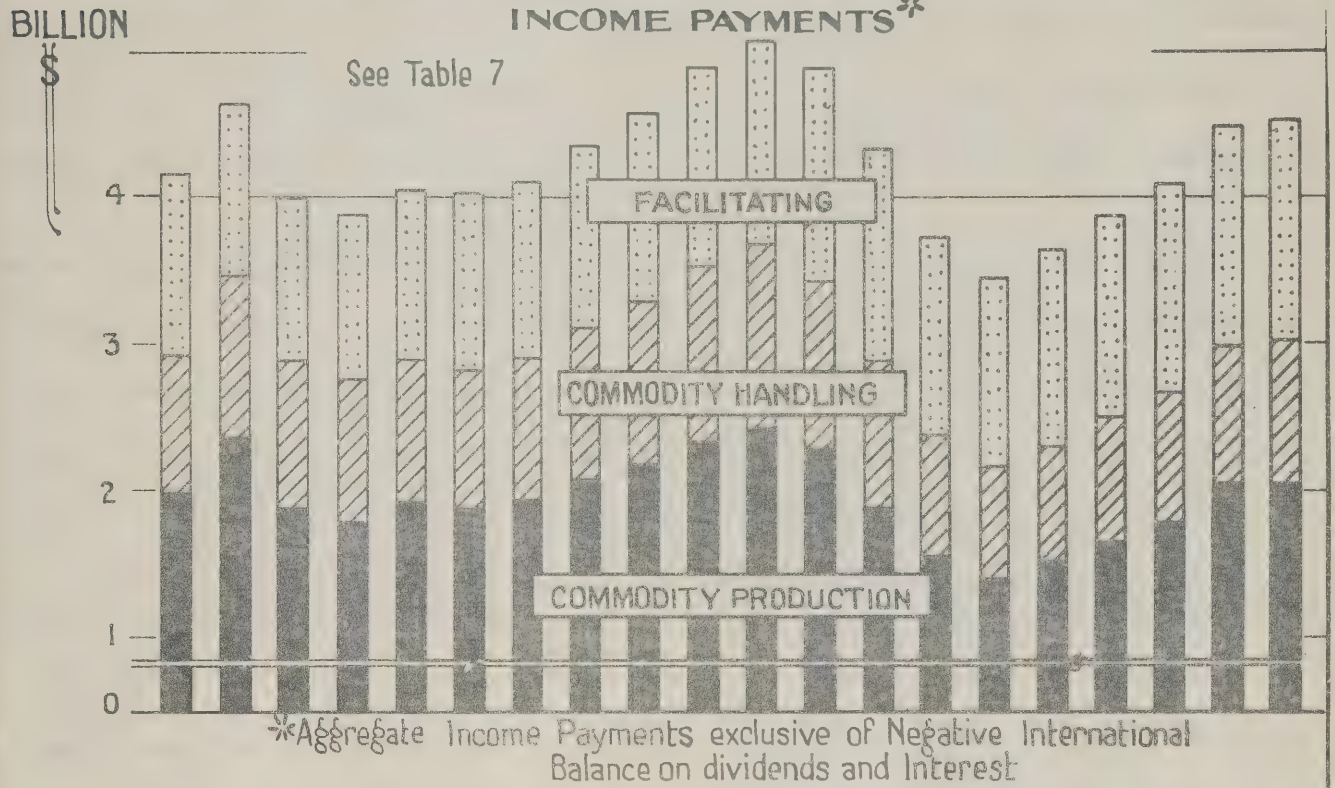
TABLE 12. - NATIONAL INCOME, INCOME PAYMENTS, POSITIVE OR NEGATIVE SAVINGS, IN THOUSAND DOLLARS, BY ECONOMIC DIVISIONS, AND INDUSTRIAL OR SERVICE GROUPS, 1919-1938, 1919-1928, 1929-1938.

(Excluding negative international balance on dividends and interest)

	Average National Income			Average Income Payments			Average Positive or Negative Savings		
	1919-1938	1919-1928	1929-1938	1919-1938	1919-1928	1929-1938	1919-1938	1919-1928	1929-1938
All Industrial and Service Groups	4,241,808	4,450,385	4,033,232	4,238,439	4,267,864	4,209,013	+ 3,369	+ 182,521	- 175,781
Commodity Producing Division									
Agriculture	675,228	855,634	494,821	680,620	800,424	560,815	- 5,392	+ 55,210	- 65,994
Forestry	156,596	192,202	120,990	156,104	174,881	137,327	+ 492	+ 17,321	- 16,337
Fisheries	29,372	34,131	26,614	26,346	28,908	23,784	+ 3,026	+ 5,223	+ 830
Trapping	11,248	13,824	8,672	11,248	13,824	8,672	-	-	-
Mining	152,794	121,118	184,470	146,844	115,996	177,692	+ 5,950	+ 5,122	+ 6,778
Electric Power	66,994	46,155	87,833	61,825	42,735	80,915	+ 5,169	+ 3,420	+ 6,918
Manufactures, n.e.s.	641,600	640,505	642,695	630,271	608,397	652,146	+ 11,329	+ 32,108	- 9,451
Construction	181,748	216,440	147,055	173,474	198,300	148,648	+ 8,274	+ 18,140	- 1,593
Custom and Repair	56,012	48,159	63,866	54,626	46,768	62,486	+ 1,386	+ 1,391	+ 1,380
	1,971,592	2,168,168	1,775,016	1,941,358	2,030,233	1,852,485	+ 30,234	+ 137,935	- 77,469
Commodity Handling Division									
Steam Railways	273,574	326,225	220,923	313,506	343,862	283,150	- 39,932	- 17,637	- 62,227
Electric Railways	33,257	34,655	31,859	34,298	35,478	33,118	- 1,041	- 823	- 1,259
Water Transport	39,106	43,607	34,605	39,503	43,317	35,689	- 397	+ 290	- 1,084
Road Transport	34,407	34,120	34,695	34,407	34,120	34,695	-	-	-
Civil Aviation	689	243	1,134	689	243	1,134	-	-	-
Storage	3,760	3,297	4,222	3,539	3,170	3,909	+ 221	+ 127	+ 313
Express	8,112	8,854	7,370	8,222	8,869	7,575	- 110	- 15	- 205
Telegraph	9,106	9,217	8,995	7,766	7,399	8,133	+ 1,340	+ 1,818	+ 862
Telephone	35,037	29,348	40,727	34,699	28,871	40,526	+ 338	+ 477	+ 201
Retail Trade	344,193	360,116	328,270	345,265	353,431	337,099	- 1,072	+ 6,685	- 8,829
Wholesale Trade	172,889	184,950	160,828	162,780	168,572	156,988	+ 10,109	+ 16,378	+ 3,840
	954,130	1,034,632	873,628	984,674	1,027,332	942,016	- 30,544	+ 7,300	- 68,388
Facilitating Division									
Banking	55,047	54,236	55,858	53,456	52,600	54,311	+ 1,591	+ 1,636	+ 1,547
Trust Companies	7,081	5,301	8,860	6,339	4,952	7,726	+ 742	+ 349	+ 1,134
Stock and Bond Dealers	21,390	19,779	23,001	21,390	19,779	23,001	-	-	-
Loan and Mortgage	6,190	7,336	5,045	5,217	5,555	4,879	+ 973	+ 1,781	+ 166
Insurance	66,606	58,625	74,588	62,996	55,164	70,827	+ 3,610	+ 3,461	+ 3,761
Real Estate	202,396	210,538	194,254	202,396	210,538	194,254	-	-	-
Government	465,060	418,936	511,185	468,137	391,329	544,946	- 3,077	+ 27,607	- 33,761
Professional	152,657	153,427	152,886	152,657	153,427	151,886	-	-	-
Education	94,411	84,238	104,584	94,411	84,238	104,584	-	-	-
Service, Other	245,248	235,169	255,327	245,408	232,717	258,098	- 160	+ 2,452	- 2,771
	1,316,086	1,247,585	1,384,588	1,312,407	1,210,299	1,414,512	+ 3,679	+ 37,286	- 29,924

NATIONAL INCOME OF CANADA 1919-1938

AGGREGATE INCOME PAYMENTS, SALARIES AND WAGES IN CURRENT PRICES BY ECONOMIC DIVISIONS



*Aggregate Income Payments exclusive of Negative International Balance on dividends and Interest

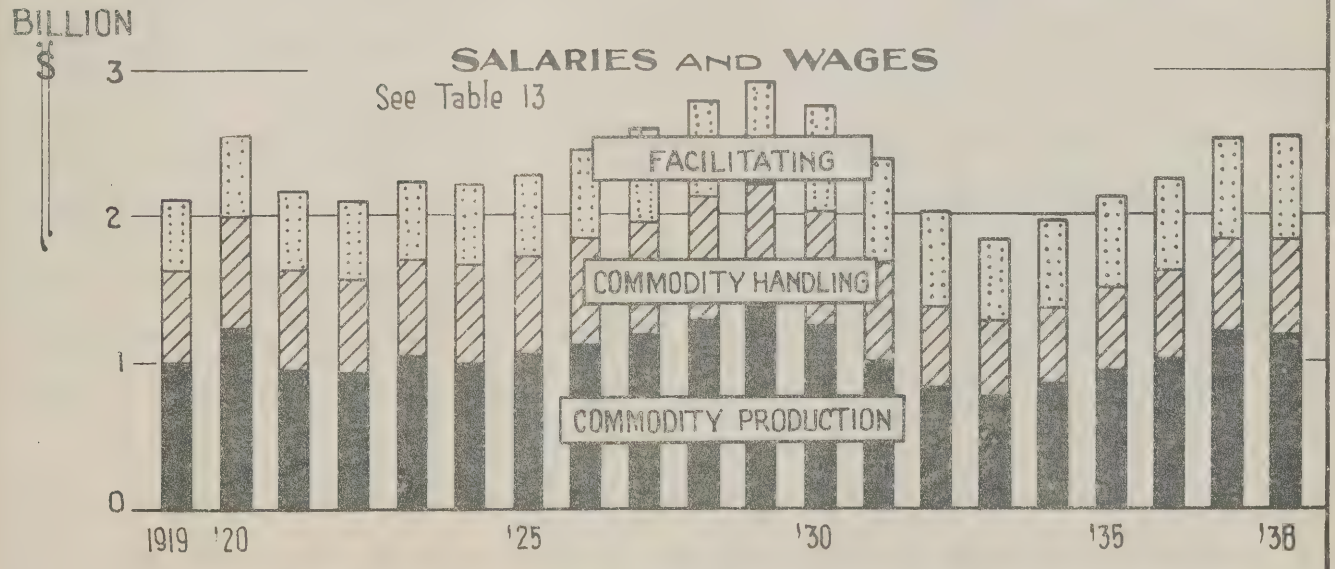


TABLE 13. - AGGREGATE SALARIES AND WAGES, DISTRIBUTION BY ECONOMIC DIVISIONS, 1919-1938, IN CURRENT PRICES, PERCENTAGES AND PRICES OF 1926, IN THOUSAND DOLLARS.

Year	Current Prices				Percentages			Cost of Living Index 1926 = 100	Prices of 1926			
	Aggregate Salaries and Wages	Commodity Producing	Commodity Handling	Facilitating	Com. Prod.	Com. Hand'g	Facil'g		Aggregate Salaries and Wages	Commodity Producing	Commodity Handling	Facilitating
1919	2,104,072	1,004,307	616,749	483,016	47.7	29.3	23.0	107.2	1,962,754	936,854	575,325	450,575
20	2,554,744	1,240,512	758,328	555,904	48.6	29.7	21.7	124.2	2,056,960	998,802	610,570	447,588
21	2,163,999	951,294	680,809	531,896	44.0	31.5	24.5	109.2	1,981,684	871,148	623,452	487,084
22	2,093,032	925,159	646,885	520,988	44.2	30.9	24.9	100.0	2,093,032	925,159	646,885	520,988
23	2,239,756	1,021,677	676,302	541,777	45.6	30.2	24.2	100.0	2,239,756	1,021,677	676,302	541,777
24	2,210,259	989,595	667,988	552,676	44.8	30.2	25.0	98.0	2,255,366	1,009,791	681,620	563,955
25	2,273,712	1,023,380	679,086	571,246	45.0	29.9	25.1	99.3	2,289,740	1,030,594	683,873	575,273
26	2,434,437	1,114,763	728,626	591,048	45.8	29.9	24.3	100.0	2,434,437	1,114,763	728,626	591,048
27	2,586,796	1,183,139	782,425	621,232	45.7	30.3	24.0	98.4	2,628,858	1,202,378	795,147	631,333
28	2,776,610	1,282,036	835,332	659,242	46.2	30.1	23.7	98.9	2,807,492	1,296,295	844,623	666,574
29	2,904,939	1,346,018	860,307	698,614	46.3	29.6	24.1	99.9	2,907,847	1,347,366	861,168	699,313
30	2,728,484	1,238,789	774,102	715,593	45.4	28.4	26.2	99.2	2,750,488	1,248,779	780,345	721,364
31	2,366,658	1,002,065	677,941	686,652	42.3	28.7	29.0	89.6	2,641,359	1,118,376	756,630	766,353
32	2,007,935	823,831	556,858	627,246	41.0	27.7	31.3	81.3	2,469,785	1,013,322	684,943	771,520
33	1,840,496	763,968	506,484	570,044	41.5	27.5	31.0	77.5	2,374,834	985,765	653,528	735,541
34	1,972,815	850,573	523,083	599,159	43.1	26.5	30.4	78.6	2,509,948	1,082,154	665,500	762,289
35	2,107,543	936,132	560,862	610,549	44.4	26.6	29.0	79.1	2,664,403	1,183,479	709,054	771,870
36	2,242,678	1,014,516	596,020	632,142	45.2	26.6	28.2	80.8	2,775,592	1,255,589	737,649	782,354
37	2,509,281	1,198,410	637,388	673,483	47.8	25.4	26.8	83.1	3,019,592	1,442,130	767,013	810,449
38	2,522,882	1,184,794	653,801	684,287	47.0	25.9	27.1	84.1	2,999,860	1,408,792	777,409	813,659

NATIONAL INCOME OF CANADA, 1919-1938

TOTAL DIVIDENDS AND INTEREST PAID BY INTERNAL SOURCES AND RECEIVED BY INDIVIDUALS FROM EXTERNAL SOURCES.— TOTAL DIVIDENDS AND INTEREST PAID TO EXTERNAL HOLDERS.— NET DIVIDENDS AND INTEREST RECEIVED BY INDIVIDUALS FROM EXTERNAL AND INTERNAL SOURCES. See Table 8

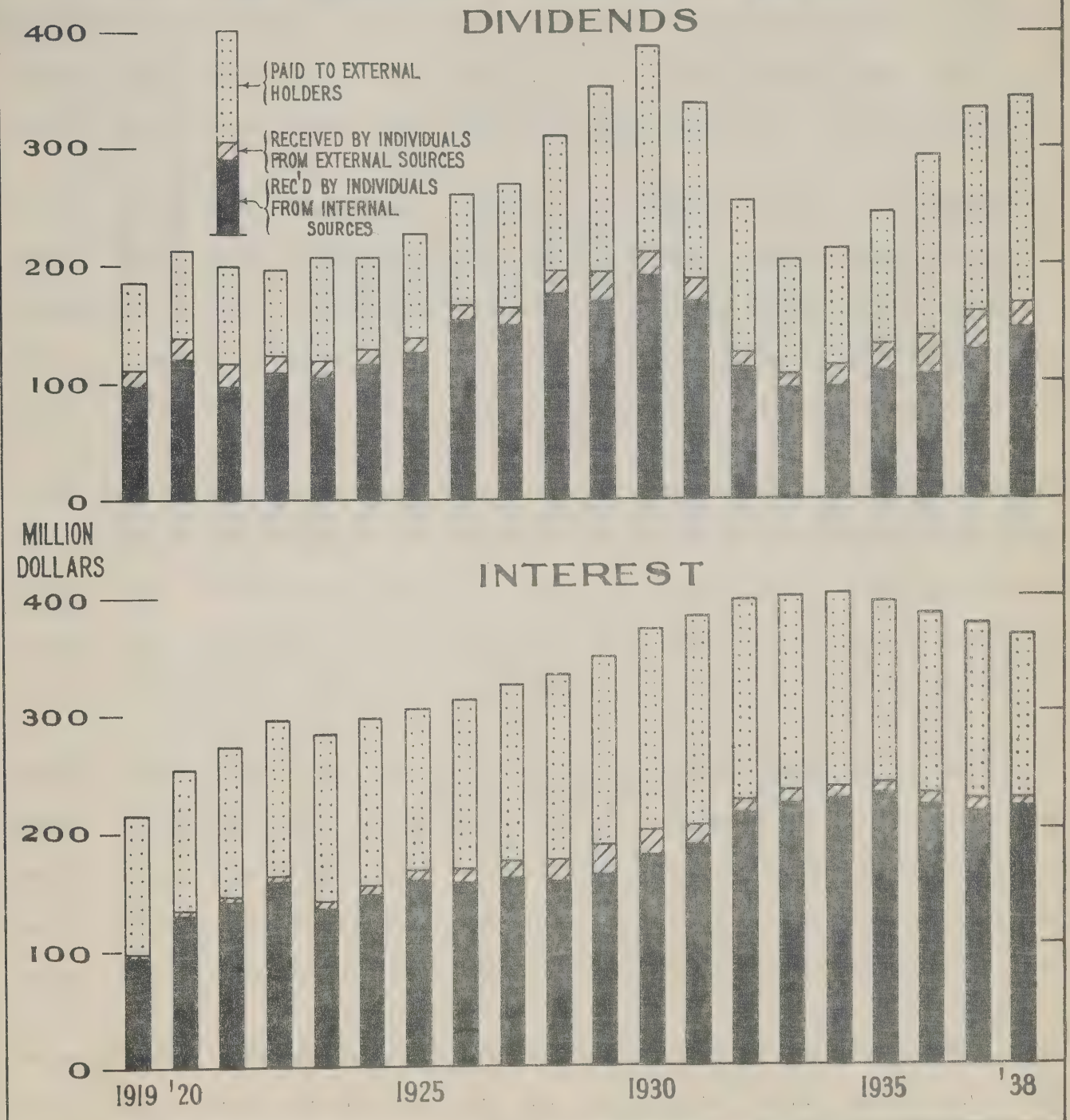


TABLE 14. - AGGREGATE WITHDRAWALS, DISTRIBUTION BY ECONOMIC DIVISIONS, 1919-1938, IN CURRENT PRICES, PERCENTAGES AND PRICES OF 1926, IN THOUSAND DOLLARS

Year	Current Prices				Percentages			Cost of Living Index 1926 = 100	Prices of 1926			
	Aggregate Withdrawals	Commodity Producing	Commodity Handling	Facilitating	Com. Prod.	Com. Hand'g	Facil'g		Aggregate Withdrawals	Commodity Producing	Commodity Handling	Facilitating
1919	1,196,565	846,342	196,909	153,314	70.7	16.5	12.8	107.2	1,116,199	789,498	183,684	143,017
20	1,330,166	950,941	211,382	167,843	71.5	15.9	12.6	124.2	1,070,987	765,653	170,195	135,139
21	1,085,889	761,872	178,785	145,232	70.2	16.5	13.3	109.2	994,404	697,685	163,723	132,996
22	1,009,960	695,204	172,412	142,344	68.8	17.1	14.1	100.0	1,009,960	695,204	172,412	142,344
23	1,036,630	727,135	163,097	146,398	70.1	15.7	14.2	100.0	1,036,630	727,135	163,097	146,398
24	1,015,343	709,510	156,433	149,400	69.9	15.4	14.7	98.0	1,036,064	723,990	159,625	152,449
25	1,024,275	718,727	150,968	154,580	70.2	14.7	15.1	99.3	1,031,495	723,793	152,032	155,670
26	1,067,971	754,224	151,194	162,553	70.6	14.2	15.2	100.0	1,067,971	754,224	151,194	162,553
27	1,123,930	788,862	163,028	172,040	70.2	14.5	15.3	98.4	1,142,205	801,689	165,679	174,837
28	1,164,565	807,572	176,765	180,228	69.3	15.2	15.5	98.9	1,177,518	816,554	178,731	182,233
29	1,186,303	817,448	183,435	185,420	68.9	15.5	15.6	99.9	1,187,490	818,266	183,619	185,605
30	1,076,892	732,225	162,125	182,542	68.0	15.1	16.9	99.2	1,085,577	738,130	163,433	184,014
31	897,314	584,853	144,391	168,070	65.2	16.1	18.7	89.6	1,001,467	652,738	161,151	187,578
32	737,345	457,471	123,716	156,158	62.0	16.8	21.2	81.3	906,943	562,695	152,172	192,076
33	699,698	432,327	115,890	151,481	61.8	16.6	21.6	77.5	902,836	557,841	149,536	195,459
34	727,054	452,119	119,465	155,470	62.2	16.4	21.4	78.6	925,005	575,215	151,991	197,799
35	769,141	481,384	128,721	159,036	62.6	16.7	20.7	79.1	972,365	608,576	162,732	201,057
36	812,091	508,203	137,061	166,827	62.6	16.9	20.5	80.8	1,005,063	628,964	169,630	206,469
37	877,911	551,310	146,874	179,727	62.8	16.7	20.5	83.1	1,056,451	663,429	176,744	216,278
38	896,365	560,394	150,083	185,888	62.5	16.7	20.8	84.1	1,065,832	666,342	178,458	221,032

NATIONAL INCOME OF CANADA 1919-1938

AGGREGATE WITHDRAWALS IN CURRENT PRICES AND PERCENTAGES BY ECONOMIC DIVISIONS

See Table 14

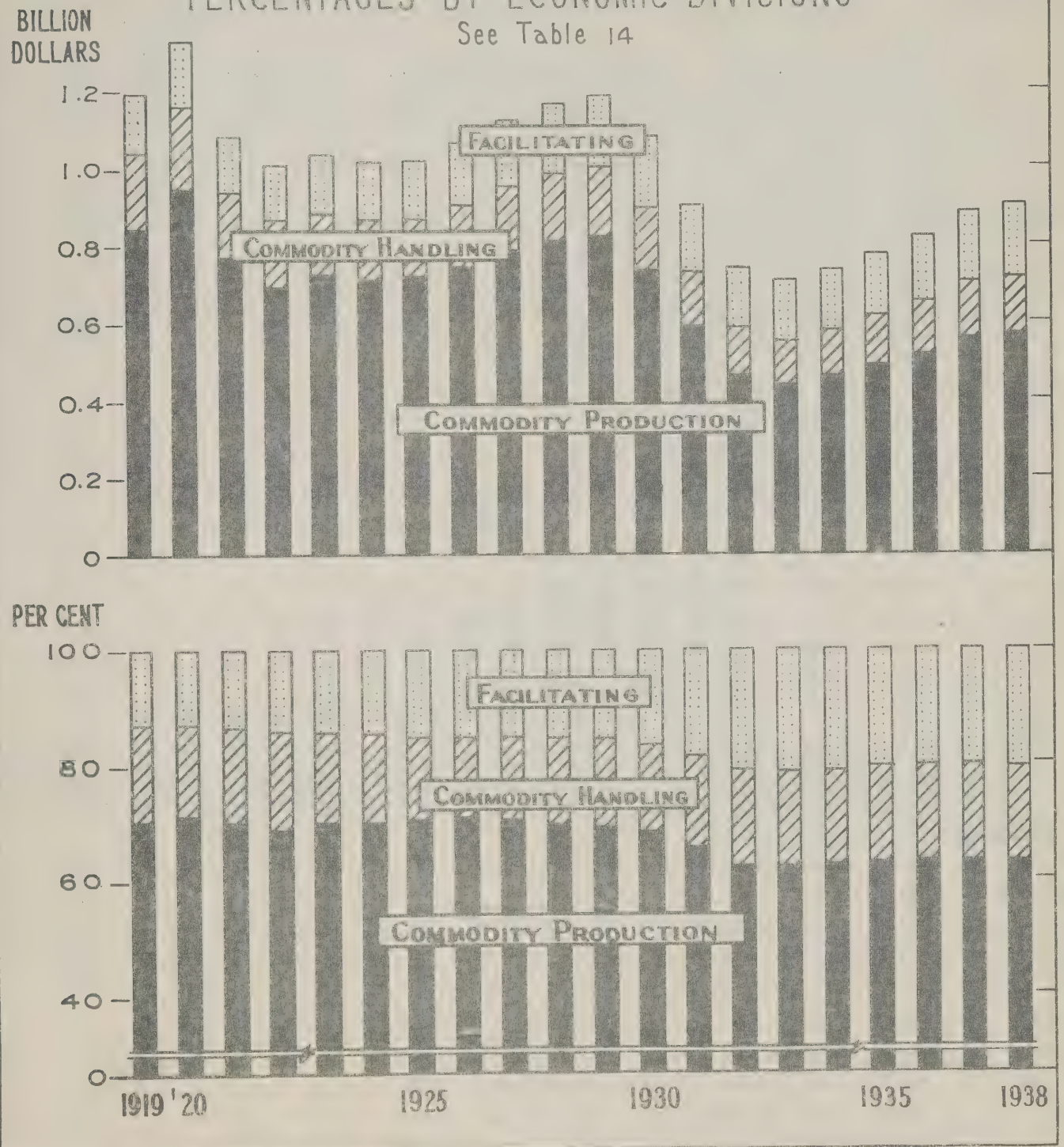


TABLE 15. - AVERAGE INCOME PAYMENTS BY TYPES, BY ECONOMIC DIVISIONS, 1919-1938, 1919-1928 AND 1929-1938, IN THOUSAND DOLLARS

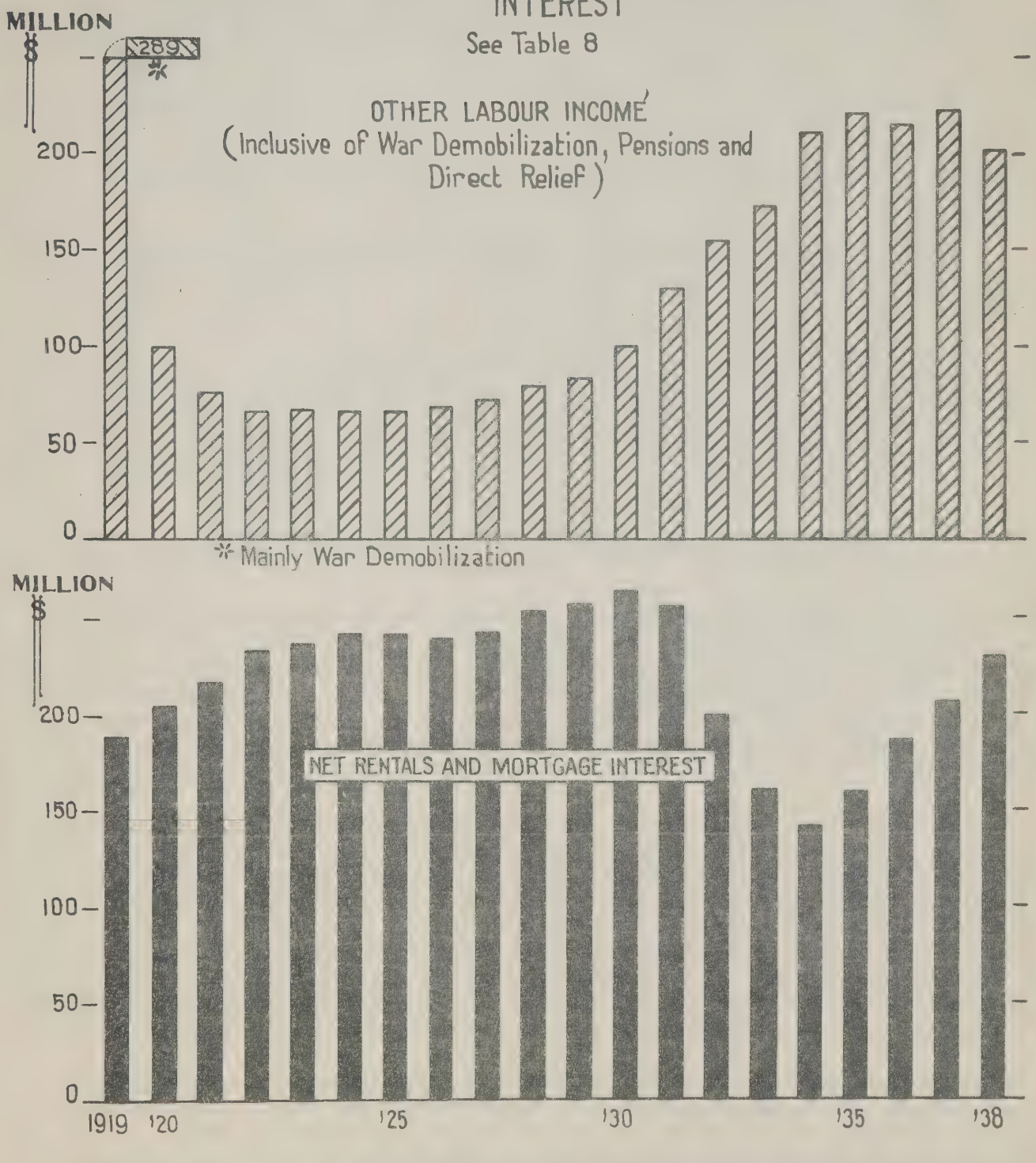
(Excluding negative international balance on dividends and interest)

	Average Salaries and Wages			Average Other Labour Income			Average Withdrawals			Average Property		
	1919-1938	1919-1928	1929-1938	1919-1938	1919-1928	1929-1938	1919-1938	1919-1928	1929-1938	1919-1938	1919-1928	1929-1938
All Industrial and Service Groups	2,332,057	2,343,742	2,320,371	132,965	94,807	171,122	986,770	1,105,529	868,011	786,647	723,786	849,509
Commodity Producing Division												
Agriculture	143,319	166,345	120,292	-	-	-	510,545	602,758	418,333	26,756	31,321	22,190
Forestry	122,764	136,136	109,393	2,502	2,152	2,852	9,209	9,331	9,087	21,629	27,262	15,995
Fisheries	10,074	10,985	9,163	200	193	208	15,862	17,492	14,231	210	238	183
Trapping	564	696	431	-	-	-	10,684	13,128	8,240	-	-	-
Mining	97,396	88,076	106,715	2,032	1,422	2,643	6,285	5,628	6,942	41,131	20,870	61,392
Electric Power	20,896	17,431	24,361	164	103	225	-	-	-	40,765	25,201	56,329
Manufactures, n.e.s.	515,678	505,964	525,392	2,935	2,512	3,358	36,115	34,734	37,497	75,543	65,187	85,899
Construction	116,006	124,533	107,479	1,632	1,234	2,029	55,410	72,309	38,512	426	224	628
Custom and Repair	28,051	23,420	32,683	110	88	132	22,796	20,659	24,933	3,669	2,601	4,738
	1,054,748	1,073,586	1,035,909	9,575	7,704	11,447	666,906	776,039	557,775	210,129	172,904	247,354
Commodity Handling Division												
Steam Railways	221,163	249,042	193,283	7,413	6,986	7,840	-	-	-	84,930	87,834	82,027
Electric Railways	22,994	24,503	21,485	725	708	742	-	-	-	10,579	10,267	10,891
Water Transport	35,983	39,292	32,673	468	388	549	1,904	2,238	1,570	1,148	1,399	897
Road Transport	18,165	17,514	18,816	316	290	342	15,926	16,316	15,537	-	-	-
Civil Aviation	638	235	1,041	-	-	-	51	8	93	-	-	-
Storage	2,723	2,431	3,016	15	13	16	425	394	456	376	332	421
Express	8,037	8,671	7,403	185	198	172	-	-	-	-	-	-
Telegraph	7,583	7,262	7,903	183	137	230	-	-	-	-	-	-
Telephone	23,050	20,493	25,606	426	289	563	-	-	-	11,223	8,089	14,357
Retail Trade	199,450	198,213	200,688	487	444	529	122,470	135,469	109,472	22,858	19,305	26,410
Wholesale Trade	131,184	139,596	122,772	140	128	152	15,860	17,672	14,047	15,596	11,176	20,017
	670,970	707,252	634,686	10,358	9,581	11,135	156,636	172,097	141,175	146,710	138,402	155,020
Facilitating Division												
Banking	36,578	35,509	37,647	1,675	1,134	2,215	-	-	-	15,203	15,957	14,449
Trust Companies	3,986	2,741	5,231	-	-	-	-	-	-	2,353	2,211	2,495
Stock and Bond Dealers	13,071	13,070	13,073	-	-	-	5,887	5,479	6,295	2,432	1,230	3,633
Loan and Mortgage	1,303	1,252	1,355	-	-	-	-	-	-	3,914	4,303	3,524
Insurance	59,842	52,715	66,969	179	116	241	-	-	-	2,975	2,333	3,617
Real Estate	4,214	5,173	3,255	-	-	-	5,117	6,071	4,162	193,065	199,294	186,837
Government	183,754	159,064	208,444	108,202	73,612	142,792	-	-	-	176,181	158,653	193,710
Professional	71,778	75,905	67,652	789	682	896	75,634	72,621	78,646	4,456	4,219	4,692
Education	85,388	77,090	93,686	886	708	1,064	927	820	1,034	7,210	5,620	8,800
Service, Other	146,425	140,385	152,464	1,301	1,270	1,332	75,663	72,402	78,924	22,019	18,660	25,378
	606,339	562,904	649,776	113,032	77,522	148,540	163,228	157,393	169,061	429,808	412,480	447,135

NATIONAL INCOME OF CANADA 1919-1938

OTHER LABOUR INCOME, NET RENTALS AND MORTGAGE INTEREST

See Table 8



Section 4.

The Gainfully Occupied.

A study of the number of the working population is an essential step in the computation of the national income. The income of the country is dependent upon the volume of production, which in turn is greatly affected by the numbers engaged. Income created by that process flows mainly to individuals who participate in the operations through their personal effort or through ownership. But it is only in the case of the gainfully occupied that we can estimate without duplication the number of individuals who co-operate in the process of income-creation and consequently receive payment for their participation.

The gainfully occupied may be segregated for analysis into three classes. The working proprietor or enterpriser is a person conducting an enterprise which he controls. Some enterprisers have other persons working for them. Others are independent workers like many farmers, small retailers and doctors. The essential fact distinguishing the enterpriser from the employee is that he takes the risk of the enterprise and does not receive for his services a fixed rate of compensation. The difference between the "employee" and the so-called "unpaid labourer" is that the latter receives no fixed remuneration in cash, the payment being limited to a living allowance mainly in kind.

As shown by Table 1 and Chart 23, it was estimated that slightly more than one-third (34.4 per cent) of the population were gainfully occupied on a full-time basis during the inter-war period. As the growth in the population was more rapid, the proportion engaged in productive enterprise was considerably less during the latter part of the period than in the years immediately following the last war. Even from 1919 to 1929 the proportion receded from 38.6 per cent to 37.3 per cent, but the important shift came in the last decade with a percentage of only 32.9 in 1938. This relative increase in the idle population has a significant bearing upon the problem of the potential manpower for war activities.

The relative importance of the three classes of the gainfully occupied population is a matter of interest. It was estimated that employees on payrolls on a full-time basis averaged 2,065,000 during the period under review. This number represents the full-time equivalent employment rather than the total number of employees who worked at any time during the year. Thus by taking account of the number of weeks worked as reported by the decennial census and the averages of monthly figures as reported to the various annual censuses, a comparable basis is obtained. Thus two persons each working six months during the year are equivalent to one employee on a full-time basis. (Table 18).

The number of "unpaid labourers" or "no pays" occupied on productive enterprise was placed at an average of nearly 302,000 per year. These ostensibly include only those who receive living allowances mainly in kind. Working proprietors numbered about 1,034,000, making up 30.4 per cent of the total number actively contributing to the productive effort. Over the whole

period, the gainfully occupied consisted of 60.7 per cent of the employees, 8.9 percent of unpaid labour, and the remainder of working proprietors. The proportion of enterprisers to the total number occupied has shown a minor recession in recent years, due to the total increasing at a greater rate than the class under consideration. The proportion of unpaid labour was somewhat larger in the latter part of the period, while the rise in the percentage of employees was of minor proportions. (See Chart 28).

Rank of Industries in Manpower.

The size of the working force, without distinction as to status, is an excellent measure of the relative importance of the various industries in the economic life of the Dominion. We find that the commodity-producing activities engaged nearly 60 per cent of the manpower, while the commodity-handling and facilitating divisions occupied the attention of approximately 19 per cent and 21 per cent, respectively.

The proportions for the thirty industries are presented in Table 17 and in the first section of Chart 26. Agriculture stands head and shoulders above any other industry in regard to the number engaged. The fortunes of more than thirty per cent of the gainfully occupied are bound up with agriculture. Manufactures, exclusive of processes closely connected with the primary industries, engaged less than half as many as the main extractive industry. The chief service industries and retail trade contended for third place with percentages of 8.9 and 8.7, respectively. The other industries, headed by construction at a percentage of 4.5, are arranged on a declining scale.

Notwithstanding the above statement, manufacturing occupies first place as an employer of labour. Manufacturing in the restricted sense employed an average of more than 470,000 wage-earners and salaried workers against 138,000 wage-earners employed by agriculture. Agriculture, on the other hand, was the predominant source of enterprise for the enterpriser and for labour receiving living allowances only. The relative importance of the thirty industrial and service groups in this respect is illustrated in Charts 26 and 27.

According to present estimates, for the last twenty years, the percentage increase in the gainfully occupied on a full-time basis was less than half that of the population. This reading is obtained by comparing the averages in the second decade with the first. The increase in population on this basis was 17.6 per cent, while the fully gainfully occupied rose only 7.3 per cent. Both estimates may be altered upon receipt of information through the decennial census of 1941, but the wide-spread idleness of the depression years and the tardiness of re-establishment appears to confirm the disparity.

Considerable interest is attached to the differential movement in total employment inclusive of the enterprisers engaged in the various industrial groups. It is evident that the facilitating industries as a whole attracted a relatively greater increase of manpower during the period than the groups concerned with the production and distribution of commodities. The gainfully

occupied in the government, finance and service divisions rose more than 13 per cent. Important gains were shown in employment by government, insurance, education and other service. The increase in the commodity-producing divisions, amounting to nearly 7 per cent, was mainly due to expansion in agriculture, manufactures n.e.s., electric power, mining and custom and repair. The limited gain in the commodity-handling activities was occasioned by declines in most groups of the transportation division, exceptions having been road transportation, civil aviation and storage. Gains of 18.2 per cent and 6.8 per cent were shown in retail and wholesale trade, respectively. The aggregate for transportation and trade recorded a gain of slightly more than 2 per cent between the two decades.

The shift in the proportional importance of the industrial groups as measured by the numbers engaged is illustrated in Table 17.

Trend of Manpower by Status.

The gain in the number of working proprietors during the inter-war period was of a very slight character. The average gain in the second decade over the first was only 1.2 per cent, representing 12,255 persons. The gain in employment proper was nearly 8 per cent from the first decade to 2,144,000 in the second. The percentage increase in living-allowance labour was much greater, the average gaining from 268,000 to 336,000 or 25.3 per cent.

The trend of employment of wage-earners and salaried workers varied greatly between different industries. Advances were recorded in manufacturing, mining, electric power and custom and repair, while reduced working forces were employed by agriculture, forestry and trapping. Referring to transportation and trade, declines appeared to predominate among the eleven industries. Retail and wholesale trade enjoyed expansion and small industries such as storage and civil aviation recorded marked percentage gains. Road transportation was another industry which has recently acquired considerable importance. Real estate alone of the facilitating groups failed to employ a larger number in the more recent decade. The expansion of governmental activities was indicated by a gain of 24 per cent in the number of employees. The professional, education and other service groups participated largely in the upward trend of the inter-war period.

The smallness of the gain in working proprietors suggests that many who were formerly independent enterprisers have accepted salaried positions, conforming to the trend toward the extension of the corporate control of industry. Individual enterprisers are important in but a few of the industrial divisions of the country's economic system. With the exception of agriculture, trade, service and to some extent transportation, industries are organized upon the principle of separation of ownership from active participation in the process of production. The gain in the number of working proprietors on the farm was slightly less than one per cent in the second decade as compared with the first. The average number in the second decade was estimated at 656,217 persons against 649,821 in the period 1919-1928. In the second decade the

proportion to the total for all industries was 63.12 per cent, a slight recession from the proportion of 63.25 in the first. The gain in retail trade was limited to 0.33 per cent, while wholesale trade showed an increase of 1.47 per cent. Professional activities recorded a gain of 2.40 per cent while considerable advances were shown in education and "other service".

It was estimated that living-allowance employees on farms averaged 284,000 in the decade 1929-1938, against 220,000 in the earlier years of the period. While farmers' sons and other members of the farm family constitute about 85 per cent of this functional group, employment of a similar type assumes some importance in professional, educational and other service activities.

Fluctuation in the number engaged in different industries is an index of sensivity to alternating economic prosperity and depression. The fully gainfully occupied, for example, declined 13.4 per cent from 1929 to 1933 and then recovered 14.2 per cent in 1937. The number of employees, representing the most elastic section of the nation's manpower, declined 18 per cent and then recovered 20.6 per cent in the same comparison. The fluctuation in working proprietors was of much lesser amplitude, an increase of 5.96 per cent following the decline of 6.29 per cent. The estimates for "unpaid labour" indicate that this group is but slightly affected by the impact of depression.

With reference to particular industries, it is in accord with the general impression that the number of gainfully occupied on the farms remained fairly constant contrary to the decline in most industries. While the number of hired men declined somewhat, farmers increased in number by more than 2 per cent from 1929 to 1933.

The total number engaged in manufactures n.e.s. showed a decline of about 24 per cent from 1929 to 1933, and then recovered nearly 37 per cent to 1937. The pattern of employment proper was somewhat similar, the more stable movement of a relatively small body of enterprisers having a minor influence.

Employment by the steam railways recorded considerable deline in the first four years of the depression, the subsequent recovery being of relatively minor proportions. The gainfully occupied in retail trade dropped 17.3 per cent and regained nearly 20 per cent from the low year of the depression.

The facilitating industries were less sensitive than the activities concerned with the production and disposal of commodities. Government employees declined only 6.7 per cent and then rose 16.4 per cent. Education showed an upward move during the four years of widespread decline, the gain continuing during the recovery period.

Rates by Main Functional Classes.

A distinction is drawn in this study between salaries and wages on the one hand and total payments to the employee class on the other. In computing rates, it is well to disregard general payments of workmen's

compensation, pensions and relief. Certain perquisites and payments in kind, however, are included with the cash wages and salaries. The farm labourer normally receives board and lodging in addition to the wages paid in cash and the same conditions are prevalent in a few other industries, notably in shipping and hotel-keeping. Living allowances were also estimated for the so-called "unpaid labour", facilitating the separate computation of rates for this class. The seeming inconsistency of lower average rates for working proprietors than for employees is explained by the marked concentration of enterprisers in agriculture and other primary industries. The rate of withdrawals was greater than the employees' rate in each of the industries, but the return to the farmer averaged less than the wage and salary rate in some other groups. The number of working proprietors and persons operating on their own account, especially on farms and in service, was relatively well maintained during the early years of the depression. Adverse economic conditions did not lead to a separation from activity, as productive operations are bound up with the whole pattern of life in which changes cannot be made very easily. There is normally no unemployment on the farm, but rather a backward flow of manpower released by the closing down of industrial activities. The prosperous period culminating in 1929 had attracted many of the farming community to urban pursuits, the migration being reversed as the depression became more pronounced. The altered conditions were manifested in a reduction in rate of return rather than in the amount of the effort expended.

The average annual rate received by employees during the twenty years was $1,097. The rate during the second decade was 8.4 per cent less than in the first, the decline having been from $1,145 to $1,049. The rate declined less than the cost of living. The net result, after adjustment by dividing by the index of the cost of living, was an increase of 10.7 per cent. Living allowances were estimated at $253 in the first decade and $185 in the second, an average of $219 for the whole period. A decline of 11.8 per cent was shown even after adjustment for changes in living costs. (Table 21, Chart 29).

The average withdrawal during the twenty years was $954, the rates in the first and second decades having been $1,075 and $833, respectively. The decline in actual rates was consequently 22.5 per cent, comparing with a decline of 6.5 per cent in per capita purchasing power estimated by means of the cost of living index. The annual movement is portrayed in Table 21, p. 88.

NATIONAL INCOME OF CANADA 1919-1938

ESTIMATED POPULATION AND THE NUMBER OF GAINFULLY OCCUPIED ON FULL-TIME BASIS: COMPARISON OF THE PER CAPITA INCOME OF THE POPULATION WITH THE NUMBER OF GAINFULLY OCCUPIED, BOTH ADJUSTED FOR THE COST OF LIVING

See Table 16

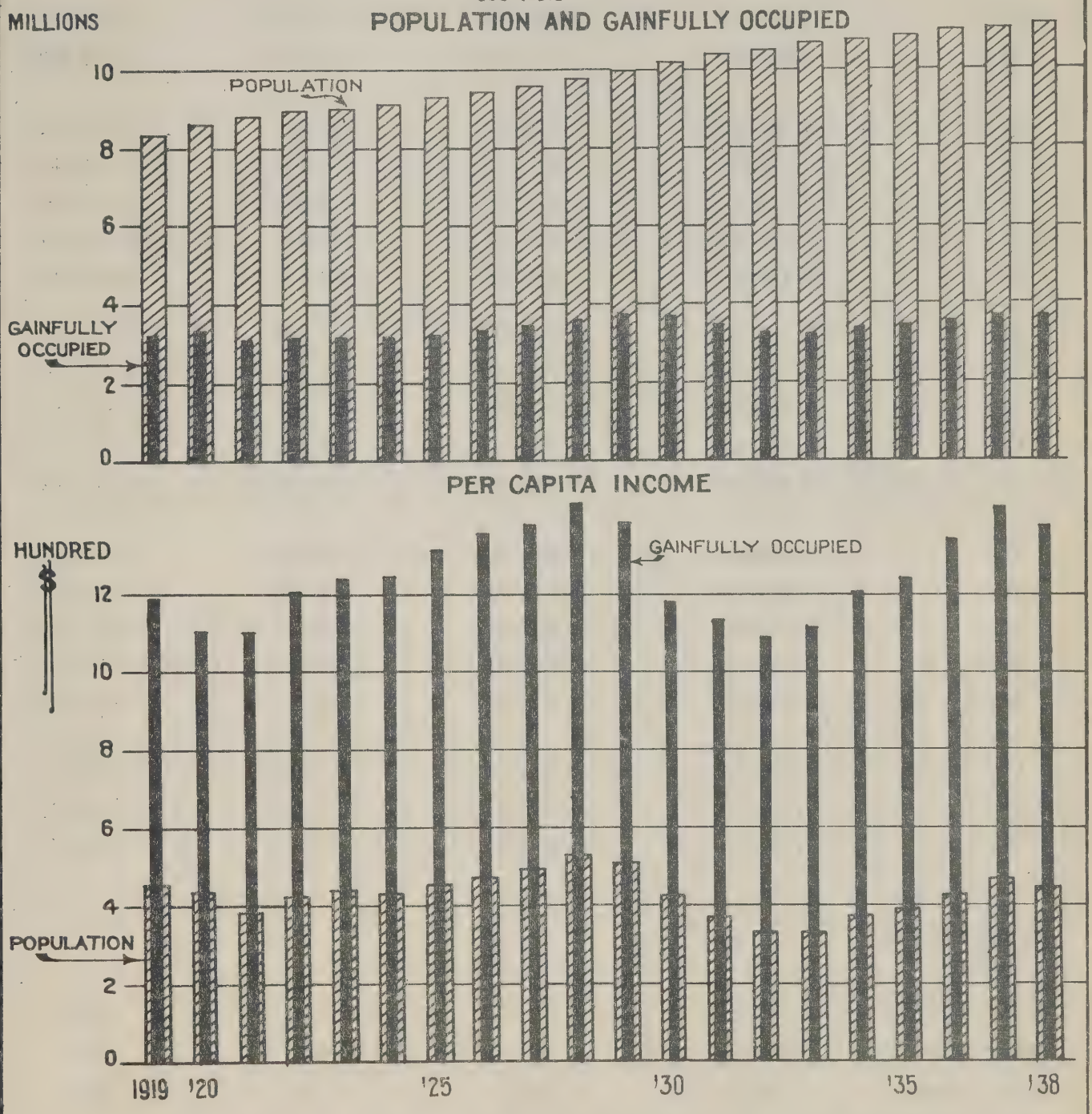


TABLE 16. - AGGREGATE NUMBER GAINFULLY OCCUPIED, FULL-TIME BASIS, BY STATUS, IN CANADIAN ECONOMIC PURSUITS, 1919 - 1938

Year	Aggregate	Employees	Unpaid Labour	Working Proprietors
	(a)	(b)	(c)	(d)
1919	3,207,539	1,936,551	227,353	1,043,635
20	3,352,717	2,067,299	235,836	1,049,582
21	3,107,296	1,819,358	257,157	1,030,781
22	3,131,813	1,851,492	256,082	1,024,239
23	3,194,294	1,927,909	250,564	1,015,821
24	3,167,313	1,892,799	266,412	1,008,102
25	3,211,501	1,937,288	269,033	1,005,180
26	3,326,203	2,029,834	289,938	1,006,431
27	3,469,352	2,132,104	302,658	1,034,590
28	3,640,501	2,260,608	323,707	1,056,186
29	3,742,463	2,330,879	339,858	1,071,726
30	3,702,760	2,292,245	357,170	1,053,345
31	3,454,018	2,084,485	334,032	1,035,501
32	3,285,569	1,939,244	331,526	1,014,799
33	3,242,904	1,909,559	329,020	1,004,325
34	3,364,224	2,020,228	326,455	1,017,541
35	3,454,847	2,096,739	329,167	1,028,941
36	3,550,759	2,173,105	334,740	1,042,914
37	3,703,032	2,303,085	335,812	1,064,135
38	3,691,339	2,287,980	339,488	1,063,871
Annual Averages in p.c.				
1919 - 1938	100.0	60.7	8.9	30.4
1919 - 1928	100.0	60.5	8.2	31.3
1929 - 1938	100.0	60.9	9.6	29.5

NATIONAL INCOME OF CANADA 1919-1938

AGGREGATE NUMBER AND ANNUAL AVERAGE EARNINGS OF EMPLOYEES FULL-TIME BASIS, 1919-1938

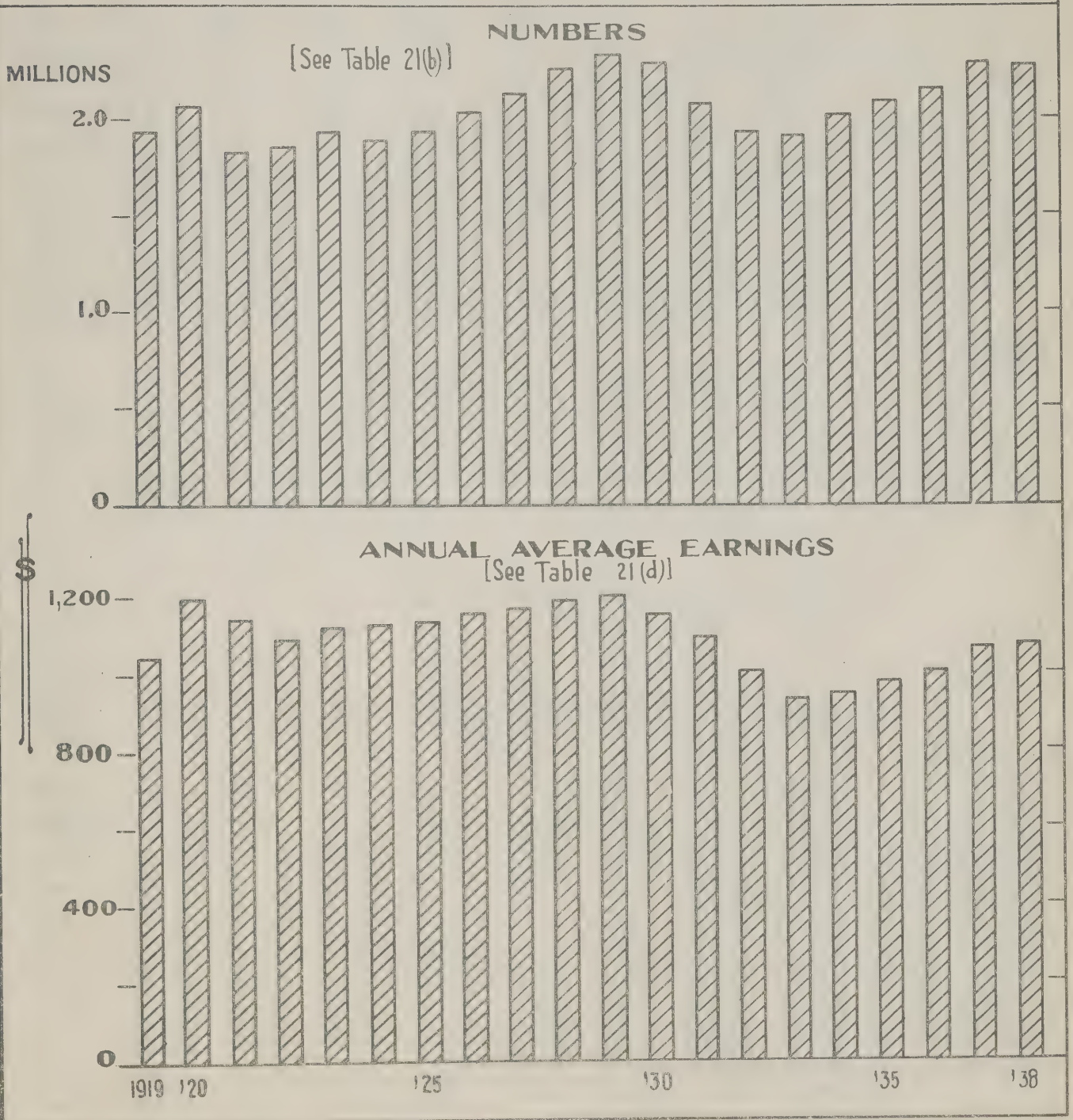
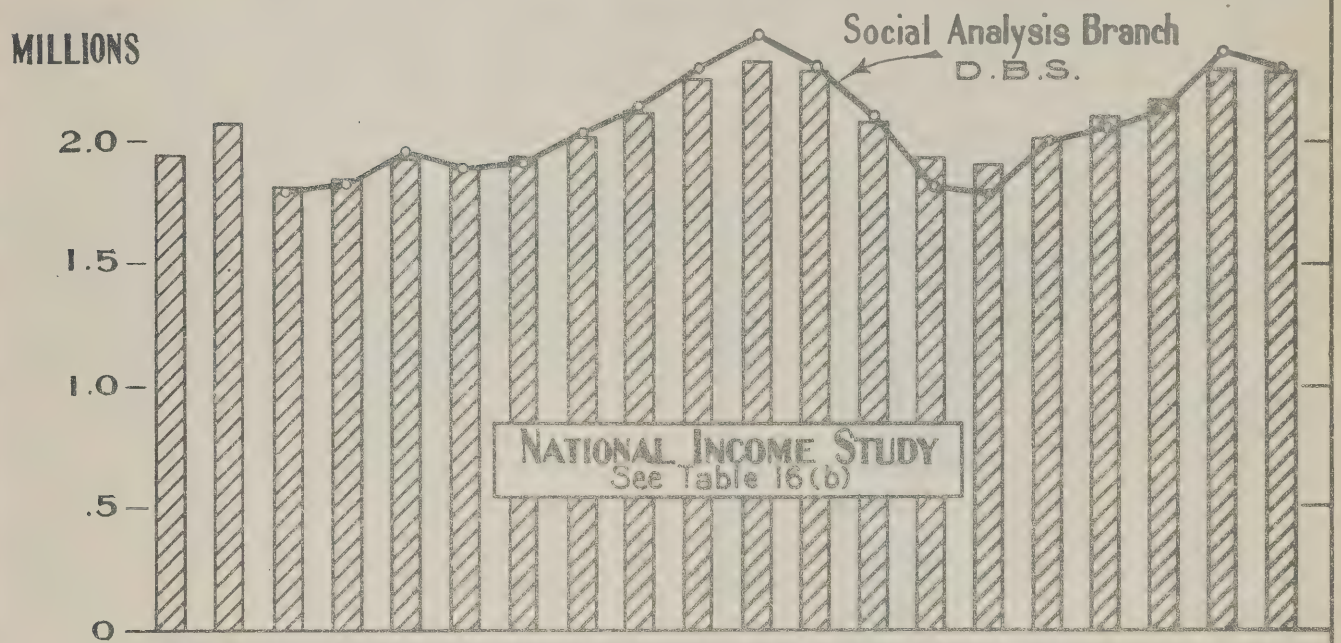


TABLE 17. - ANALYSIS OF NUMBER OF GAINFULLY OCCUPIED, FULL-TIME BASIS.

Industrial or Service Groups	Annual Average 1919-1938	Percentage of Dominion Total	Annual Average 1919-1928	Percentage of Dominion Total	Annual Average 1929-1938	Percentage of Dominion Total	Percentage Change 1929-1938 / 1919-1928	Percentage Change 1933 / 1929	Percentage Change 1937 / 1933
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
All Industrial and Service Groups	3,400,022	100.00	3,280,853	100.00	3,519,192	100.00	+ 7.26	- 13.35	+ 14.19
Commodity Producing Division									
Agriculture	1,043,020	30.68	1,013,250	30.88	1,072,789	30.48	+ 5.88	+ 0.14	+ 1.24
Forestry	134,565	3.96	138,736	4.23	130,394	3.71	- 6.01	- 39.74	+ 55.87
Fisheries	41,359	1.22	38,632	1.18	44,087	1.25	+ 14.12	+ 3.78	+ 4.82
Trapping	14,860	0.44	15,806	0.48	13,914	0.39	- 11.97	- 29.67	+ 28.86
Mining	80,194	2.36	72,356	2.21	88,032	2.50	+ 21.67	- 31.93	+ 65.05
Electric Power	14,276	0.42	12,303	0.37	16,250	0.46	+ 32.08	- 8.95	+ 15.63
Manufactures, n.e.s.	489,962	14.41	465,889	14.20	514,034	14.61	+ 10.33	- 23.97	+ 36.67
Construction	153,073	4.50	155,548	4.74	150,597	4.28	- 3.18	- 20.16	+ 5.32
Custom and Repair	57,219	1.68	48,754	1.49	65,685	1.87	+ 34.73	- 8.73	+ 14.95
	2,028,528	59.67	1,961,274	59.78	2,095,782	59.55	+ 6.86	- 12.63	+ 15.30
Commodity Handling Division									
Steam Railways	152,622	4.49	170,680	5.20	134,564	3.82	- 21.16	- 35.33	+ 8.98
Electric Railways	16,611	0.49	17,523	0.53	15,700	0.45	- 10.41	- 20.84	- 3.60
Water Transport	27,474	0.81	28,934	0.88	26,015	0.74	- 10.09	- 20.76	+ 12.00
Road Transport	34,100	1.00	32,746	1.00	35,455	1.01	+ 8.27	- 6.69	+ 3.24
Civil Aviation	415	0.01	132	-	697	0.02	+427.31	+ 27.01	+ 14.63
Storage	2,531	0.07	2,225	0.07	2,837	0.08	+ 27.47	+ 3.54	+ 17.30
Express	6,539	0.19	8,219	0.25	4,860	0.14	- 40.88	- 29.28	+ 17.23
Telegraph	6,863	0.20	7,090	0.22	6,636	0.19	- 6.41	- 33.78	+ 20.11
Telephone	21,159	0.62	21,634	0.66	20,683	0.59	- 4.40	- 31.55	- 2.04
Retail Trade	297,539	8.75	272,744	8.31	322,335	9.16	+ 18.18	- 17.27	+ 19.97
Wholesale Trade	89,889	2.64	86,929	2.65	92,849	2.64	+ 6.81	- 15.28	+ 17.57
	655,742	19.27	648,852	19.77	662,631	18.84	+ 2.12	- 21.70	+ 14.85
Facilitating Division									
Banking	26,995	0.79	26,909	0.82	27,082	0.77	+ 0.64	- 10.66	- 6.63
Trust Companies	2,536	0.08	1,802	0.05	3,271	0.09	+ 81.60	+ 4.12	+ 16.18
Stock and Bond Dealers	10,103	0.30	9,704	0.30	10,501	0.30	+ 8.21	- 27.07	+ 32.26
Loan and Mortgage	837	0.02	826	0.03	848	0.02	+ 2.65	+ 3.74	- 4.28
Insurance	30,799	0.91	26,602	0.81	34,996	1.00	+ 31.56	- 1.75	- 4.61
Real Estate	6,546	0.19	8,056	0.25	5,036	0.14	- 37.48	- 52.23	- 0.78
Government	128,009	3.77	114,089	3.48	141,929	4.03	+ 24.40	- 6.67	+ 16.43
Professional	127,876	3.76	123,659	3.77	132,094	3.75	+ 6.82	- 18.15	+ 18.91
Education	78,089	2.30	71,333	2.17	84,844	2.41	+ 18.94	+ 5.35	+ 2.70
Service, Other	303,962	8.94	287,747	8.77	320,178	9.10	+ 11.27	- 4.03	+ 9.96
	715,752	21.06	670,725	20.45	760,771	21.61	+ 13.43	- 7.26	+ 10.62

NATIONAL INCOME OF CANADA 1919-1938

COMPARISON OF ESTIMATED AGGREGATE NUMBER OF EMPLOYEES, FULL-TIME BASIS; NATIONAL INCOME STUDY WITH SOCIAL ANALYSIS BRANCH, D.B.S. - AGGREGATE GAINFULLY OCCUPIED BY STATUS OF EMPLOYMENT



GAINFULLY OCCUPIED BY STATUS
See Table 16

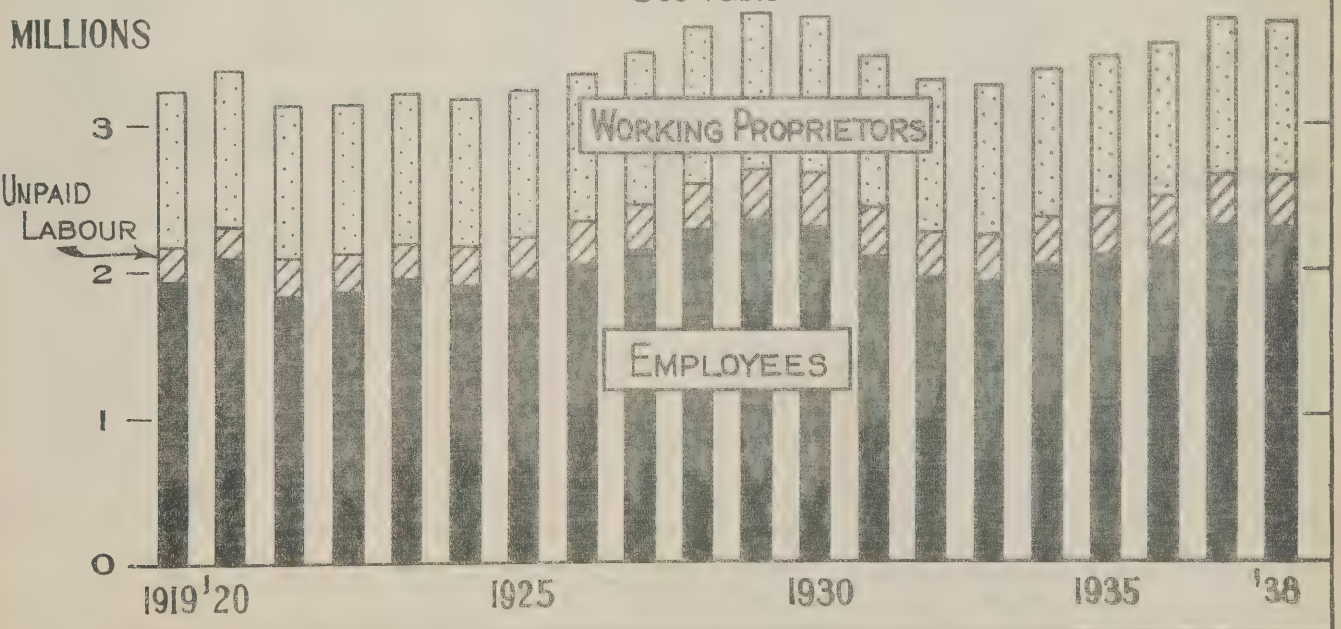


TABLE 18. - ANALYSIS OF NUMBER OF EMPLOYEES ON FULL-TIME BASIS.

Industrial or Service Groups	Annual Average 1919-1938	Percentage of Dominion Total	Annual Average 1919-1928	Percentage of Dominion Total	Annual Average 1929-1938	Percentage of Dominion Total	Percentage Change 1929-1938 / 1919-1928	Percentage Change 1933 / 1929	Percentage Change 1937 / 1933
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
All Industrial and Service Groups	2,064,640	100.00	1,985,524	100.00	2,143,755	100.00	+ 7.97	- 18.08	+ 20.61
Commodity Producing Division									
Agriculture	137,872	6.68	143,637	7.23	132,108	6.16	- 8.03	- 3.75	+ 2.84
Forestry	127,784	6.19	132,470	6.68	123,099	5.74	- 7.07	- 40.13	+ 53.48
Fisheries	14,353	0.70	13,305	0.67	15,400	0.72	+ 15.75	+ 4.79	+ 2.38
Trapping	1,001	0.05	1,078	0.05	924	0.05	- 14.27	- 20.24	+ 0.75
Mining	76,444	3.70	68,951	3.47	83,936	3.91	+ 21.73	- 33.40	+ 66.44
Electric Power	14,276	0.69	12,303	0.62	16,250	0.76	+ 32.08	- 8.95	+ 15.63
Manufactures, n.e.s.	470,252	22.78	447,240	22.52	493,264	23.01	+ 10.29	- 25.06	+ 38.29
Construction	118,026	5.72	113,364	5.71	122,687	5.72	+ 8.22	- 10.53	+ 7.66
Custom and Repair	32,555	1.58	26,693	1.34	38,416	1.79	+ 43.92	- 9.79	+ 16.36
	992,563	48.09	959,041	48.29	1,026,084	47.86	+ 6.99	- 22.57	+ 30.82
Commodity Handling Division									
Steam Railways	152,622	7.39	170,680	8.60	134,564	6.28	- 21.16	- 35.33	+ 8.98
Electric Railways	16,611	0.80	17,523	0.88	15,700	0.73	- 10.41	- 20.84	- 3.60
Water Transport	26,534	1.28	27,876	1.40	25,192	1.18	- 9.63	- 20.62	+ 12.22
Road Transport	19,385	0.94	18,165	0.91	20,605	0.96	+ 13.44	- 8.70	+ 4.16
Civil Aviation	386	0.02	128	0.01	644	0.03	+401.95	+ 24.85	+ 12.40
Storage	2,350	0.11	2,061	0.11	2,639	0.12	+ 28.05	+ 3.15	+ 18.35
Express	6,539	0.32	8,219	0.41	4,859	0.23	- 40.88	- 29.28	+ 17.23
Telegraph	6,863	0.33	7,090	0.36	6,636	0.31	- 6.41	- 33.78	+ 20.11
Telephone	21,159	1.02	21,634	1.09	20,683	0.97	- 4.40	- 31.55	- 2.04
Retail Trade	195,518	9.47	170,892	8.62	220,144	10.27	+ 28.82	- 10.27	+ 18.18
Wholesale Trade	81,948	3.97	79,045	3.98	84,850	3.97	+ 7.34	- 15.04	+ 17.34
	529,915	25.65	523,313	26.37	536,516	25.05	+ 2.52	- 20.54	+ 13.52
Facilitating Division									
Banking	26,995	1.31	26,909	1.36	27,082	1.26	+ 0.64	- 10.66	- 6.63
Trust Companies	2,536	0.12	1,801	0.09	3,271	0.15	+ 81.60	+ 4.12	+ 16.18
Stock and Bond Dealers	7,638	0.37	7,527	0.38	7,750	0.36	+ 2.96	- 31.72	+ 39.23
Loan and Mortgage	837	0.04	826	0.04	848	0.04	+ 2.65	+ 3.74	- 4.28
Insurance	30,799	1.49	26,602	1.34	34,996	1.63	+ 31.56	- 1.75	- 4.61
Real Estate	3,050	0.15	3,834	0.19	2,266	0.11	- 40.89	- 68.19	+ 12.86
Government	128,009	6.20	114,089	5.75	141,929	6.62	+ 24.40	- 6.67	+ 16.43
Professional	65,388	3.17	61,417	3.09	69,359	3.23	+ 12.93	- 22.13	+ 26.03
Education	63,737	3.09	58,151	2.93	69,322	3.23	+ 19.21	+ 5.28	+ 2.72
Service, Other	213,173	10.32	202,014	10.17	224,332	10.46	+ 11.05	- 3.23	+ 8.42
	542,162	26.26	503,170	25.34	581,155	27.09	+ 15.50	- 6.77	+ 10.30

NATIONAL INCOME OF CANADA 1919-1938

PERCENTAGE DISTRIBUTION OF ANNUAL AVERAGES 1919-1938; AGGREGATE GAINFULLY OCCUPIED AND EMPLOYEES, BY INDUSTRIAL OR SERVICE GROUPS

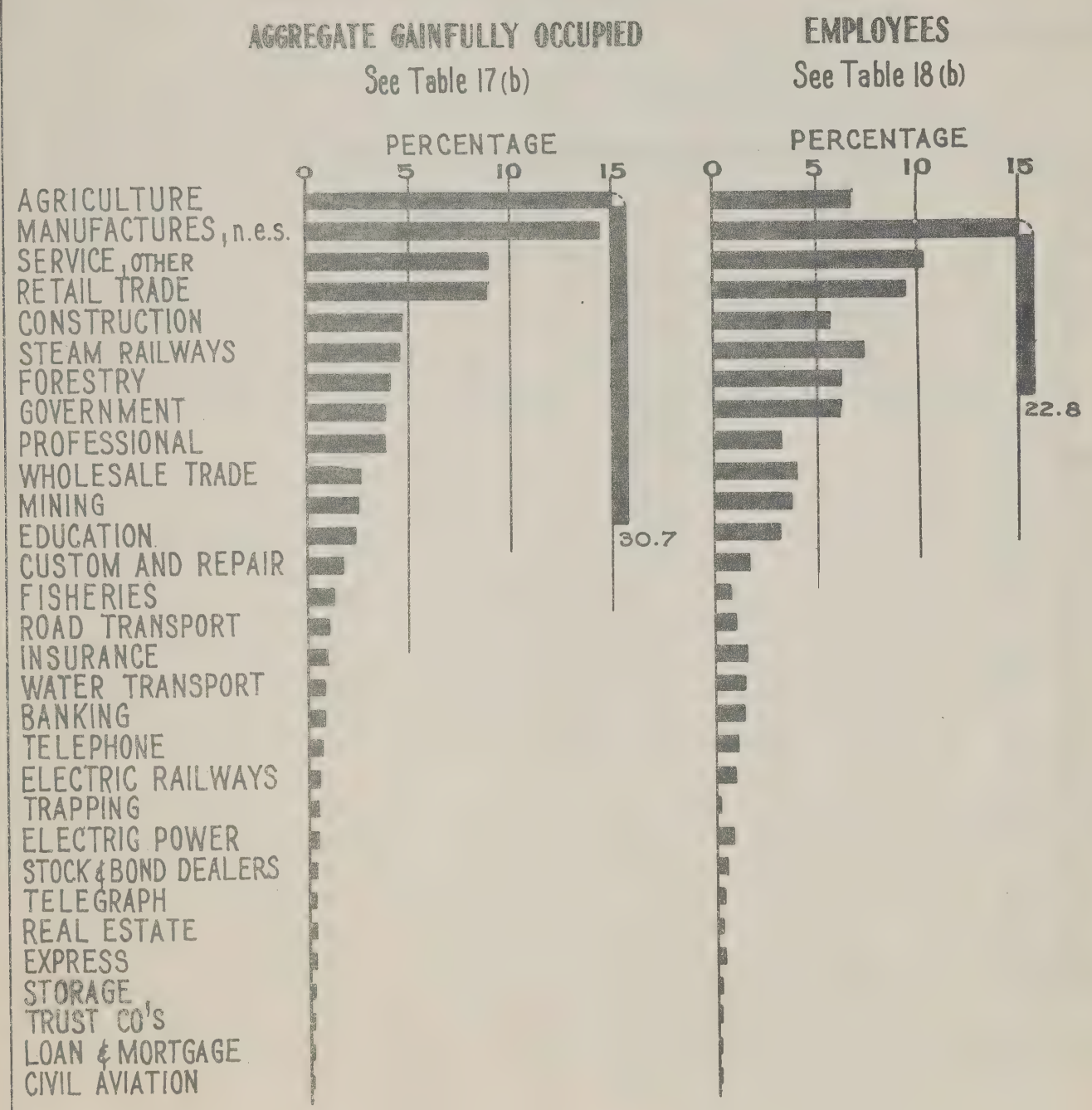


TABLE 19. - ANALYSIS OF NUMBER OF WORKING PROPRIETORS.

Industrial or Service Groups	Annual Average 1919-1938	Percentage of Dominion Total	Annual Average 1919-1928	Percentage of Dominion Total	Annual Average 1929-1938	Percentage of Dominion Total	Percentage Change 1929-1938 / 1919-1928	Percentage Change 1933 / 1929	Percentage Change 1937 / 1933
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
All Industrial and Service Groups	1,033,582	100.00	1,027,455	100.00	1,039,710	100.00	+ 1.19	- 6.29	+ 5.96
Commodity Producing Division									
Agriculture	653,020	63.18	649,821	63.25	656,217	63.12	+ 0.98	+ 2.11	+ 1.08
Forestry	5,690	0.55	5,136	0.50	6,243	0.60	+ 21.54	- 29.34	+105.64
Fisheries	23,663	2.29	22,192	2.16	25,135	2.42	+ 13.26	+ 3.37	+ 6.06
Trapping	13,859	1.34	14,728	1.43	12,990	1.25	- 11.80	- 30.33	+ 31.13
Mining	3,750	0.36	3,405	0.33	4,096	0.39	+ 20.31	+ 8.60	+ 41.71
Manufactures, n.e.s.	19,710	1.91	18,649	1.82	20,771	2.00	+ 11.38	+ 7.00	+ 4.56
Construction	35,047	3.39	42,184	4.11	27,910	2.68	- 33.84	- 48.12	- 6.42
Custom and Repair	24,664	2.39	22,061	2.15	27,268	2.62	+ 23.61	- 7.23	+ 13.00
	779,403	75.41	778,176	75.75	780,630	75.08	+ 0.32	- 1.91	+ 2.75
Commodity Handling Division									
Water Transport	940	0.09	1,057	0.10	823	0.08	- 22.14	- 24.76	+ 5.72
Road Transport	14,715	1.42	14,581	1.42	14,850	1.43	+ 1.84	- 3.80	+ 1.97
Civil Aviation	29	-	4	-	54	-	+1240.00	+ 61.29	+ 42.00
Storage	181	0.02	164	0.01	197	0.02	+ 20.23	+ 8.79	+ 4.04
Retail Trade	102,021	9.86	101,851	9.91	102,191	9.83	+ 0.33	- 29.92	+ 24.11
Wholesale Trade	7,941	0.77	7,883	0.77	7,999	0.77	+ 1.47	- 17.83	+ 20.00
	125,827	12.16	125,540	12.21	126,114	12.13	+ 0.46	- 26.45	+ 20.73
Facilitating Division									
Stock and Bond Dealers	2,465	0.24	2,178	0.21	2,751	0.26	+ 26.34	- 12.57	+ 15.28
Real Estate	3,496	0.34	4,222	0.41	2,771	0.27	- 34.37	- 44.87	- 9.65
Professional	41,208	3.99	40,719	3.96	41,698	4.01	+ 2.40	- 13.26	+ 11.62
Education	777	0.08	710	0.07	843	0.08	+ 18.71	+ 5.76	+ 2.60
Service, Other	80,406	7.78	75,910	7.39	84,903	8.17	+ 11.85	- 5.92	+ 14.25
	128,352	12.43	123,739	12.04	132,966	12.79	+ 7.46	- 9.60	+ 12.91

NATIONAL INCOME OF CANADA 1919-1938

PERCENTAGE DISTRIBUTION OF ANNUAL AVERAGES 1919-1938, WORKING PROPRIETORS AND UNPAID LABOUR BY INDUSTRIAL OR SERVICE GROUPS

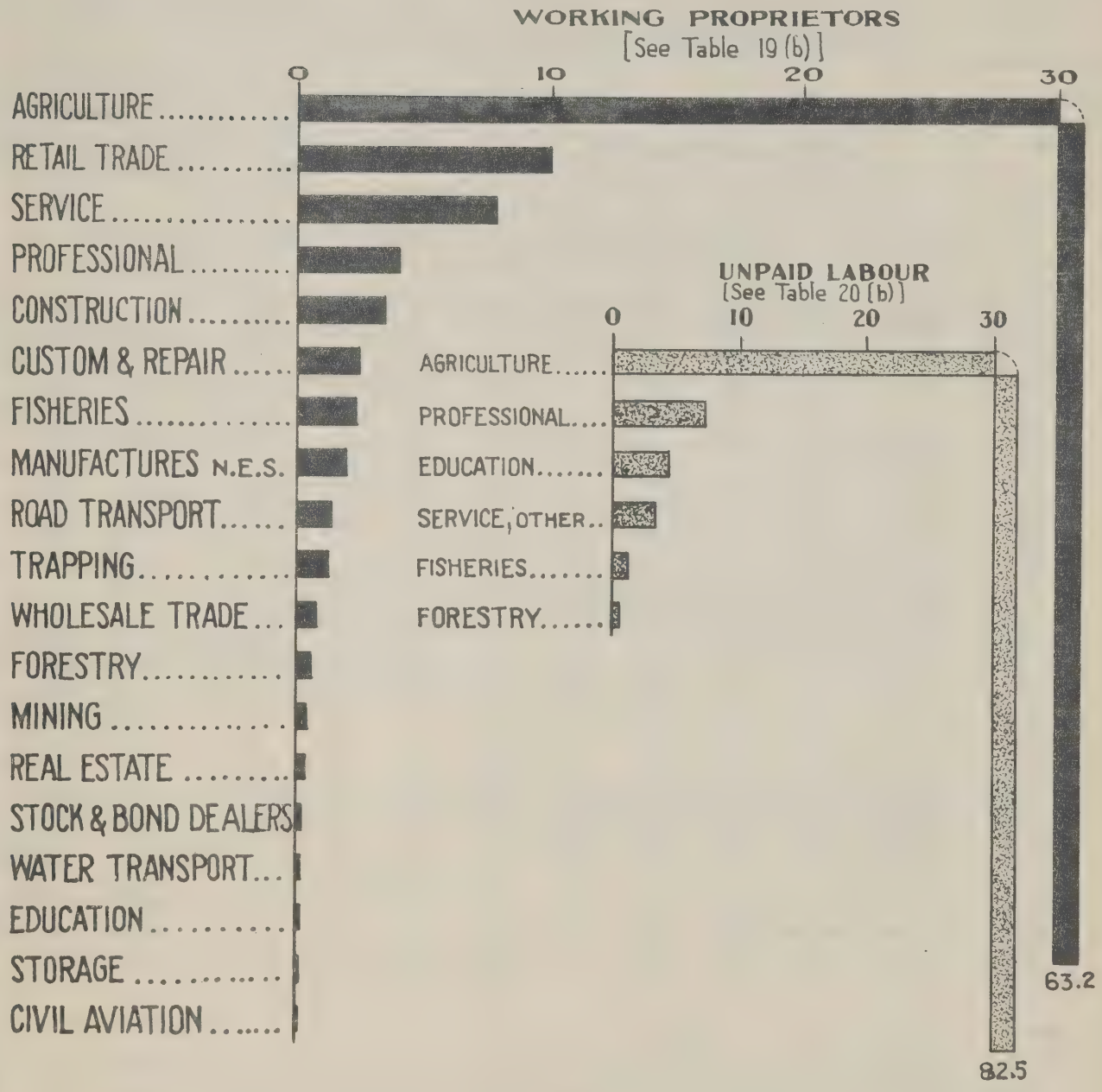


TABLE 20. - ANALYSIS OF NUMBER OF UNPAID LABOURERS.

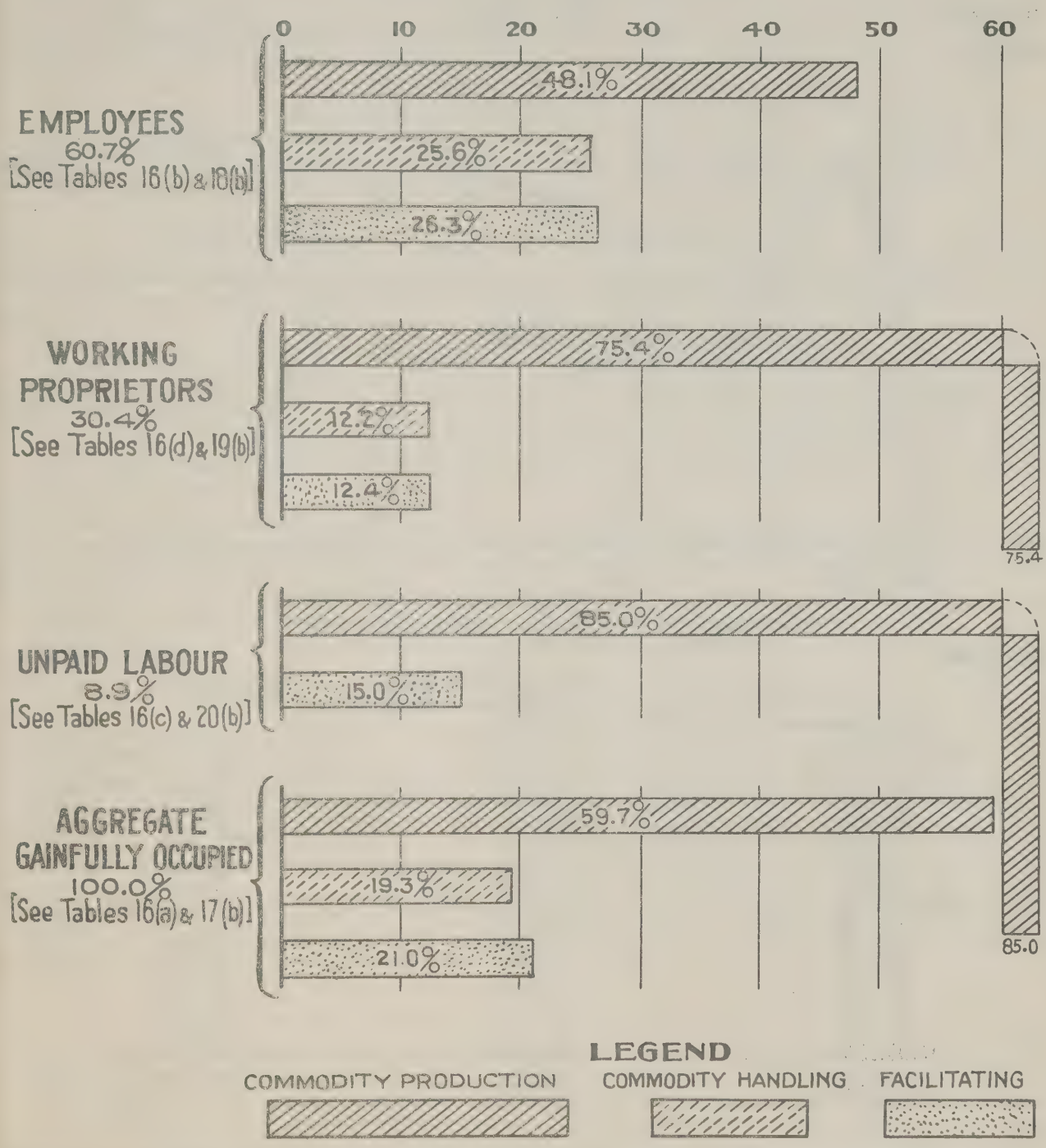
Industrial or Service Groups	Annual Average 1919-1938	Percentage of Dominion Total	Annual Average 1919-1928	Percentage of Dominion Total	Annual Average 1929-1938	Percentage of Dominion Total	Percentage Change 1929-1938 / 1919-1928	Percentage Change 1933 / 1929	Percentage Change 1937 / 1933
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
All Industrial and Service Groups	301,800	100.00	267,874	100.00	335,727	100.00	+ 25.33	- 3.19	+ 2.06
Commodity Producing Division									
Agriculture	252,128	83.53	219,792	82.05	284,464	84.73	+ 29.42	- 2.50	+ 0.89
Forestry	1,091	0.36	1,130	0.42	1,052	0.31	- 6.89	- 43.26	+ 58.67
Fisheries	3,343	1.11	3,134	1.17	3,552	1.06	+ 13.31	+ 2.24	+ 6.83
	256,562	85.00	224,056	83.64	289,068	86.10	+ 29.02	- 2.64	+ 1.13
Facilitating Division									
Professional	21,280	7.06	21,523	8.03	21,037	6.27	- 2.26	- 14.36	+ 11.62
Education	13,575	4.50	12,472	4.66	14,679	4.37	+ 17.70	+ 5.63	+ 2.61
Service, Other	10,383	3.44	9,823	3.67	10,943	3.26	+ 11.41	- 5.77	+ 8.94
	45,238	15.00	43,818	16.36	46,659	13.90	+ 6.48	- 6.56	+ 8.03

TABLE 21. - PER CAPITA REMUNERATION, BY TYPES, OF THE GAINFULLY OCCUPIED, FULL-TIME BASIS, IN CURRENT PRICES AND PRICES ADJUSTED FOR CHANGES IN THE COST OF LIVING, 1919 - 1938.

Year	Index of Cost of Living	Number of Employees	Salaries and Wages ($000's)	Wage Rate $	Wage Rate Adjusted $ (d ÷ a)	Number of Unpaid Labour	Living Allowances ($000's)	Rate $	Rate Adjusted $ (h ÷ a)	Number of Working Proprietors	Withdrawals ($000's)	Rate $	Rate Adjusted $ (l ÷ a)
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
1919	107.2	1,936,551	2,037,886	1,052	981	227,353	66,186	291	271	1,043,635	1,196,565	1,147	1,070
20	124.2	2,067,299	2,487,404	1,203	969	235,836	67,340	286	230	1,049,582	1,330,166	1,267	1,020
21	109.2	1,819,358	2,100,254	1,154	1,057	257,157	63,745	248	227	1,030,781	1,085,889	1,053	964
22	100.0	1,851,492	2,033,191	1,098	1,098	256,082	59,841	234	234	1,024,239	1,009,960	986	986
23	100.0	1,927,909	2,178,470	1,130	1,130	250,564	61,286	245	245	1,015,821	1,036,630	1,020	1,020
24	98.0	1,892,799	2,145,809	1,134	1,157	266,412	64,450	242	247	1,008,102	1,015,343	1,007	1,028
25	99.3	1,937,288	2,208,727	1,140	1,148	269,033	64,985	242	244	1,005,180	1,024,275	1,019	1,026
26	100.0	2,029,834	2,363,226	1,164	1,164	289,938	71,211	246	246	1,006,431	1,067,971	1,061	1,061
27	98.4	2,132,104	2,512,181	1,178	1,197	302,658	74,615	247	251	1,034,590	1,123,930	1,086	1,104
28	98.9	2,260,608	2,695,160	1,192	1,205	323,707	81,450	252	255	1,056,186	1,164,565	1,103	1,115
29	99.9	2,330,879	2,818,781	1,209	1,210	339,858	86,158	254	254	1,071,726	1,186,303	1,107	1,108
30	99.2	2,292,245	2,645,650	1,154	1,163	357,170	82,834	232	234	1,053,345	1,076,892	1,022	1,030
31	89.6	2,084,485	2,300,218	1,103	1,231	334,032	66,440	199	222	1,035,501	897,314	867	968
32	81.3	1,939,244	1,954,112	1,008	1,240	331,526	53,823	162	199	1,014,799	737,345	727	894
33	77.5	1,909,559	1,788,907	937	1,209	329,020	51,589	157	203	1,004,325	699,698	697	899
34	78.6	2,020,228	1,919,345	950	1,209	326,455	53,470	164	209	1,017,541	727,054	715	910
35	79.1	2,096,739	2,051,365	978	1,236	329,167	56,178	171	216	1,028,941	769,141	748	946
36	80.8	2,173,105	2,187,211	1,006	1,245	334,740	55,467	166	205	1,042,914	812,091	779	964
37	83.1	2,303,085	2,450,637	1,064	1,280	335,812	58,644	175	211	1,064,135	877,911	825	993
38	84.1	2,287,980	2,463,560	1,077	1,281	339,488	59,322	175	208	1,063,871	896,365	843	1,002
Annual Averages													
1919-38	94.4	2,064,640	2,267,105	1,097	1,171	301,800	64,952	219	231	1,033,582	986,770	954	1,005
1919-28	103.5	1,985,524	2,276,231	1,145	1,111	267,874	67,511	253	245	1,027,455	1,105,529	1,075	1,039
1929-38	85.3	2,143,755	2,257,979	1,049	1,230	335,727	62,393	185	216	1,039,710	868,011	833	971

NATIONAL INCOME OF CANADA 1919-1938

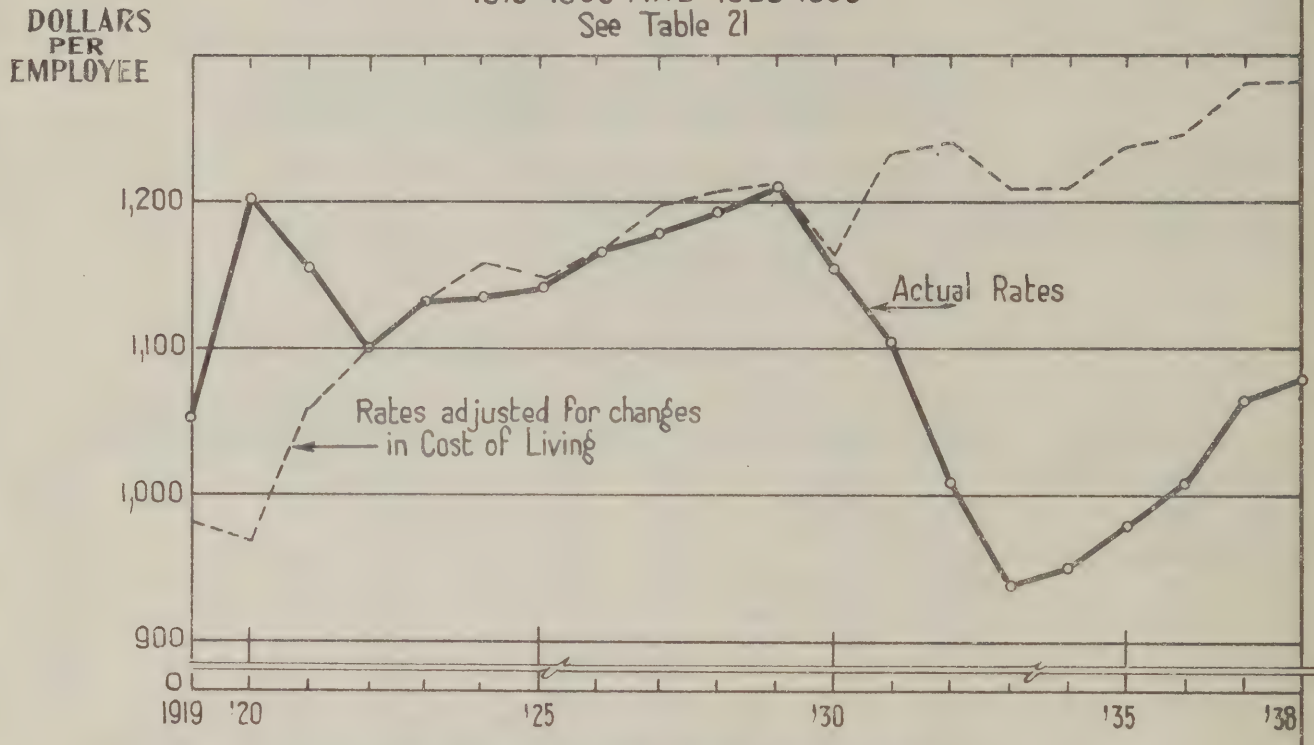
PERCENTAGE DISTRIBUTION OF ANNUAL AVERAGES 1919-1938. AGGREGATE GAINFULLY OCCUPIED AND ITS COMPONENTS, BY ECONOMIC DIVISIONS

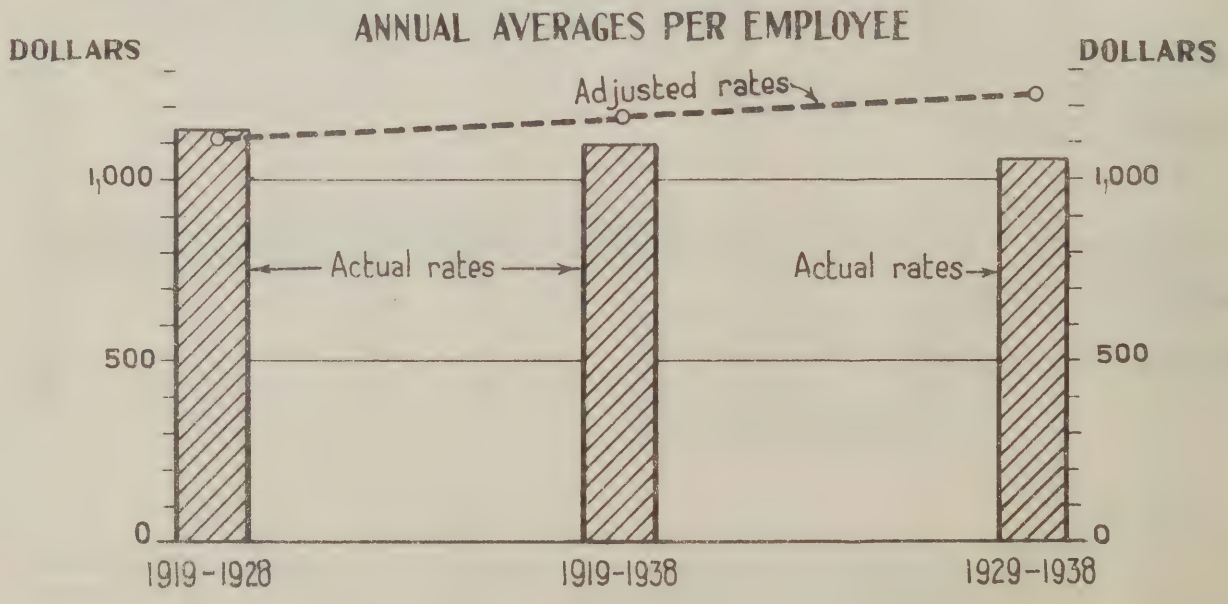


NATIONAL INCOME OF CANADA 1919-1938

ANNUAL RATES, ACTUAL AND ADJUSTED FOR CHANGES IN COST OF LIVING, OF EMPLOYEES ON FULL-TIME BASIS - ANNUAL AVERAGE RATES PER EMPLOYEE, 1919-1928 1919-1938 AND 1929-1938

See Table 21





Section 5.

Provincial Distribution of Income.

There is a growing demand for information as to the provincial distribution of national income, and the figures should prove of value to the business community, as well as to government agencies and research organizations. The national totals, important as they are, merely represent the average conditions of a great country composed of a number of widely different economic areas. Like all averages these figures have the defect of being representative of the whole but not of its component parts.

Owing to the variety of climatic conditions and the differences in physical conditions and natural resources, together with certain historic factors governing the distribution and composition of the population, the various sections of Canada have developed along distinctly different economic lines.

In the use of the estimates of provincial distribution, it is helpful to have a broad perspective of the factors determining the relative size of the incomes of different areas of the country from year to year. There are apparently two sets of factors at work. The first of these determines the long-term position of each province as a producer of income. The natural resources, the proximity of transportation facilities, the composition of the population, the advantages gained by priority of settlement and development, are prominent among the fundamental factors determining relative economic importance. In general, it may be observed that large populations and high population density are associated with high average income.

The long-term industrial and economic structure within a given area is also influenced by that area's strategic position with regard to shipping and marketing. It is partly determined, again, by the volume of accumulated capital available, which is generally greater in the older communities.

The factors in the second set, which are closely connected with the first, are responsible for short-term changes in the income of a given area. They are concerned with the diversity and adaptability of economic activity within that area, rather than with its actual extent. A province may be dominated economically by a very few industrial groups, which form the chief support of its population. Fluctuations affecting these groups would, therefore, exert a great influence upon income in the province. Such fluctuations may, in any year, bring the average income of the people of a province normally belonging to a higher income level, down to or even below the average income in the provinces characterized by low incomes. The concentration upon grain production in Saskatchewan, for example, led to a considerable reduction in per capita income during the years of adverse climatic conditions.

Appropriate data have become sufficiently plentiful in recent years to permit the estimation, with a fair degree of confidence in the results, of the total income in each province and of the composition of that income by types and by industrial and service groups. Estimates of income by provinces, given in this report, although not the first to be computed, are based upon a more comprehensive and detailed break-down of income than has previously been affected in Canada.

If the ideal treatment were possible, the amount received in each province would be based entirely upon individual accounts of receipts, and the amount originating would be computed from business records of direct payments to individuals. In the absence of complete data from either of these sources, the estimates shown here were based mainly upon decennial and annual census returns. For many of the components, the Dominion totals proviously computed were allocated by provinces according to recognized factors of distribution. Numbers and rates were compiled as a basis for the remuneration of employees and the withdrawals of entrepreneurs. Having obtained aggregate income payments, the Dominion positive or negative savings of enterprises were distributed in proportion to the magnitude of such payments in each province, resulting in the estimates of income produced.

The provincial distribution of national income and income payments from 1919 to 1938 is presented in Tables 22 to 24 and Charts 30 to 32. During the twenty years, nearly 63 per cent of the total income payments in the Dominion were received by the residents of Ontario and Quebec. Each of the four Western provinces received from 6.9 per cent to 8.5 per cent, while the combined receipts of the Maritime Provinces amounted to 7.2 per cent of the whole.

Despite the severe economic depression of the 'thirties, income receipts in Quebec and Ontario averaged slightly greater in the decade from 1929 to 1938 than in the period from 1919 to 1928, inclusive. The decline in the Prairie Provinces, especially in Saskatchewan, was of considerable proportions. Minor declines ranging from 1.6 per cent to 5.2 per cent were recorded in the Maritime Provinces and in British Columbia.

The percentage increase in payments from 1933 to 1937 is a rough measure of variability. According to this criterion, fluctuations were extreme in British Columbia, where the gain during the four years was 37.2 per cent. The increase in Quebec and Ontario was 33.3 per cent and 32.6 per cent, respectively. New Brunswick also recorded marked recovery, the increase having been 30.4 per cent, while the gain in Nova Scotia was nearly 30 per cent. The advances in the Prairie Provinces ranged from 20 per cent to 24 per cent. The least variation in this respect was shown by Prince Edward Island, where the advance was only about 14 per cent.

The annual average share of individuals in income payments during the two decades is indicated in Table 24. For Canada as a whole, these per capita income payments averaged $447 for the first decade from 1919 to 1928, and $370 for the second decade from 1929 to 1938. This is a decline of $77 or 17.2 per cent in the second decade as compared with the first. The figures show that Manitoba, Saskatchewan and Alberta enjoyed relatively high per capita income payments during the first decade and that, although they experienced a marked decline in the second, only one of them, Saskatchewan, fell much below the average of $370 for the nine provinces. The extraordinary drought in certain areas in Saskatchewan would account for the greater decline in that Province. The Maritime Provinces and Quebec showed lesser fluctuations. Ontario and British Columbia were well above the average in both decades.

In computing the provincial income produced and payments to individuals, many intermediate results were obtained. Space forbids the presentation of this information in the present chapter, but the plan calls for a separate publication on geographical distribution.

TABLE 22. - NATIONAL INCOME PRODUCED IN THOUSAND DOLLARS, BY PROVINCES, 1919-1938.

(Including negative international balance on dividends and interest)

Year	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat-chewan	Alberta	* British Columbia
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1919	23,302	187,729	129,633	856,690	1,504,338	328,259	360,436	332,657	364,266
20	25,719	199,356	137,260	1,018,830	1,725,268	361,213	402,872	377,183	366,238
21	20,573	151,689	100,584	803,182	1,405,010	303,306	353,247	298,757	298,274
22	21,273	144,629	102,502	823,183	1,464,310	286,988	329,805	276,764	312,970
23	22,454	148,997	110,474	882,147	1,541,698	280,159	327,889	304,555	326,971
24	21,857	142,349	106,002	874,535	1,516,182	272,480	313,352	277,990	329,404
25	24,165	151,300	117,760	957,628	1,621,629	296,160	334,469	297,735	360,647
26	26,240	165,533	122,420	1,060,785	1,746,158	314,965	357,932	311,440	388,103
27	26,217	168,170	129,807	1,109,724	1,812,513	323,032	369,226	336,044	407,624
28	29,141	186,226	140,538	1,213,991	2,013,636	356,374	393,187	360,465	443,979
29	29,081	194,605	143,784	1,228,608	2,027,377	345,896	371,486	358,699	449,192
30	25,425	162,093	123,201	1,055,575	1,700,159	293,781	296,283	297,827	371,502
31	20,523	130,549	98,020	858,738	1,399,358	234,688	227,400	234,643	293,935
32	16,323	107,775	80,931	705,440	1,166,662	191,735	180,648	196,285	247,468
33	17,211	107,015	80,862	687,106	1,132,613	180,422	169,601	186,561	233,381
34	18,043	120,888	90,727	760,008	1,308,834	198,867	204,736	202,151	266,324
35	19,236	129,282	96,821	811,503	1,390,540	210,206	214,875	219,968	288,943
36	21,222	148,326	111,333	933,220	1,566,299	241,410	231,458	240,629	335,096
37	23,291	165,081	125,276	1,088,116	1,779,945	265,827	248,253	266,034	380,390
38	23,163	163,185	121,494	1,053,656	1,734,059	261,381	248,177	268,403	372,878
Averages									
1919-1938	22,723	153,739	113,472	939,133	1,577,829	277,357	296,766	282,240	341,879
1919-1928	24,094	164,598	119,698	960,070	1,635,074	312,294	354,241	317,359	359,84[illegible]
1929-1938	21,352	142,880	107,245	918,197	1,520,585	242,421	239,291	247,120	323,91[illegible]
P. C. Change									
1929-1938 / 1919-1928	- 11.4	- 13.2	- 10.4	- 4.4	- 7.0	- 22.4	- 32.4	- 22.1	- 10.0

* Includes the Yukon and the North West Territories.

NATIONAL INCOME OF CANADA 1919-1938

AGGREGATE INCOME PAYMENTS BY PROVINCES

See Table 23

(Including Negative International Balance on Dividends and Interest)

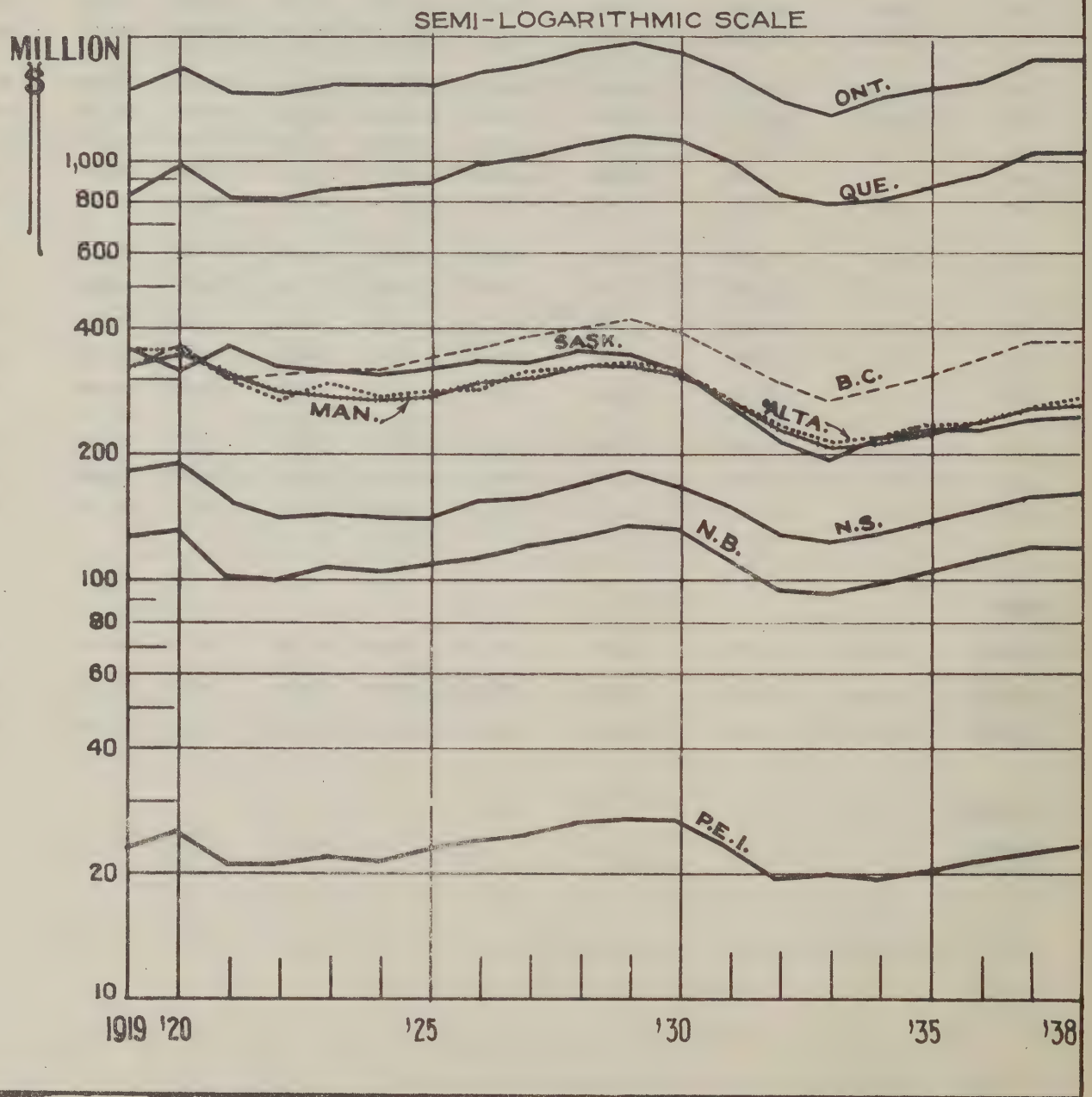


TABLE 23. - AGGREGATE INCOME PAYMENTS IN THOUSAND DOLLARS, BY PROVINCES, 1919-1938.

(Including negative international balance on dividends and interest)

Year	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat-chewan	Alberta	[x] British Columbia
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)
1919	22,735	183,160	126,478	835,841	1,467,727	320,270	351,664	324,561	355,401
20	24,861	192,708	132,682	984,853	1,667,731	349,167	389,437	364,604	354,018
21	20,945	154,436	102,405	817,727	1,430,455	308,799	359,644	304,167	303,673
22	20,844	141,715	100,435	806,598	1,434,808	281,206	323,160	271,188	306,664
23	21,847	144,966	107,485	858,281	1,499,989	272,580	319,018	296,316	318,125
24	21,639	140,930	104,945	865,817	1,501,068	269,764	310,228	275,219	326,120
25	22,695	142,095	110,595	899,364	1,522,967	278,141	314,119	279,620	338,705
26	24,190	152,603	112,857	977,925	1,609,762	290,362	329,973	287,113	357,787
27	24,428	156,697	120,951	1,034,015	1,688,858	300,994	344,036	313,118	379,815
28	26,334	168,287	127,000	1,097,050	1,819,667	322,045	355,312	325,742	401,212
29	27,169	181,812	134,332	1,147,839	1,894,096	323,157	347,064	335,118	419,662
30	26,910	171,563	130,399	1,117,246	1,799,489	310,945	313,593	315,227	393,207
31	23,710	150,623	113,243	992,102	1,616,681	271,136	262,716	271,083	339,583
32	19,467	128,532	96,518	841,304	1,391,354	228,662	215,438	234,088	295,129
33	19,782	123,000	92,940	789,737	1,301,789	207,371	194,934	214,427	268,240
34	19,350	129,647	97,301	815,077	1,403,671	213,277	219,571	216,798	285,622
35	20,634	138,678	103,858	870,484	1,491,607	225,484	230,493	235,956	309,944
36	21,188	148,087	111,154	931,717	1,563,778	241,021	231,085	240,242	334,556
37	22,530	159,684	121,180	1,052,542	1,721,752	257,136	240,137	257,336	367,954
38	23,154	163,119	121,445	1,053,231	1,733,360	261,276	248,077	268,295	372,728
Averages									
1919-1938	22,721	153,627	113,410	939,438	1,578,030	276,640	294,985	281,061	341,407
" "	0.57 %	3.83 %	2.83 %	23.48 %	39.44 %	6.92 %	7.37 %	7.03 %	8.53 %
1919-1928	23,052	157,760	114,583	917,747	1,564,303	299,333	339,659	303,265	344,152
1929-1938	22,389	149,495	112,237	961,128	1,591,758	253,947	250,311	258,857	338,663
P. C. Changes									
1929-1938 / 1919-1928	- 2.9	- 5.2	- 2.0	+ 4.7	+ 1.8	- 15.2	-26.3	-14.6	- 1.6
1937 / 1933	+13.9	+29.8	+30.4	+33.3	+32.6	+ 24.0	+23.2	+20.0	+37.2

[x] Includes the Yukon and the North West Territories.

NATIONAL INCOME OF CANADA 1919-1938

PER CAPITA INCOME PAYMENTS BY PROVINCES

(Including Negative International Balance on Dividends and Interest)

See Table 24

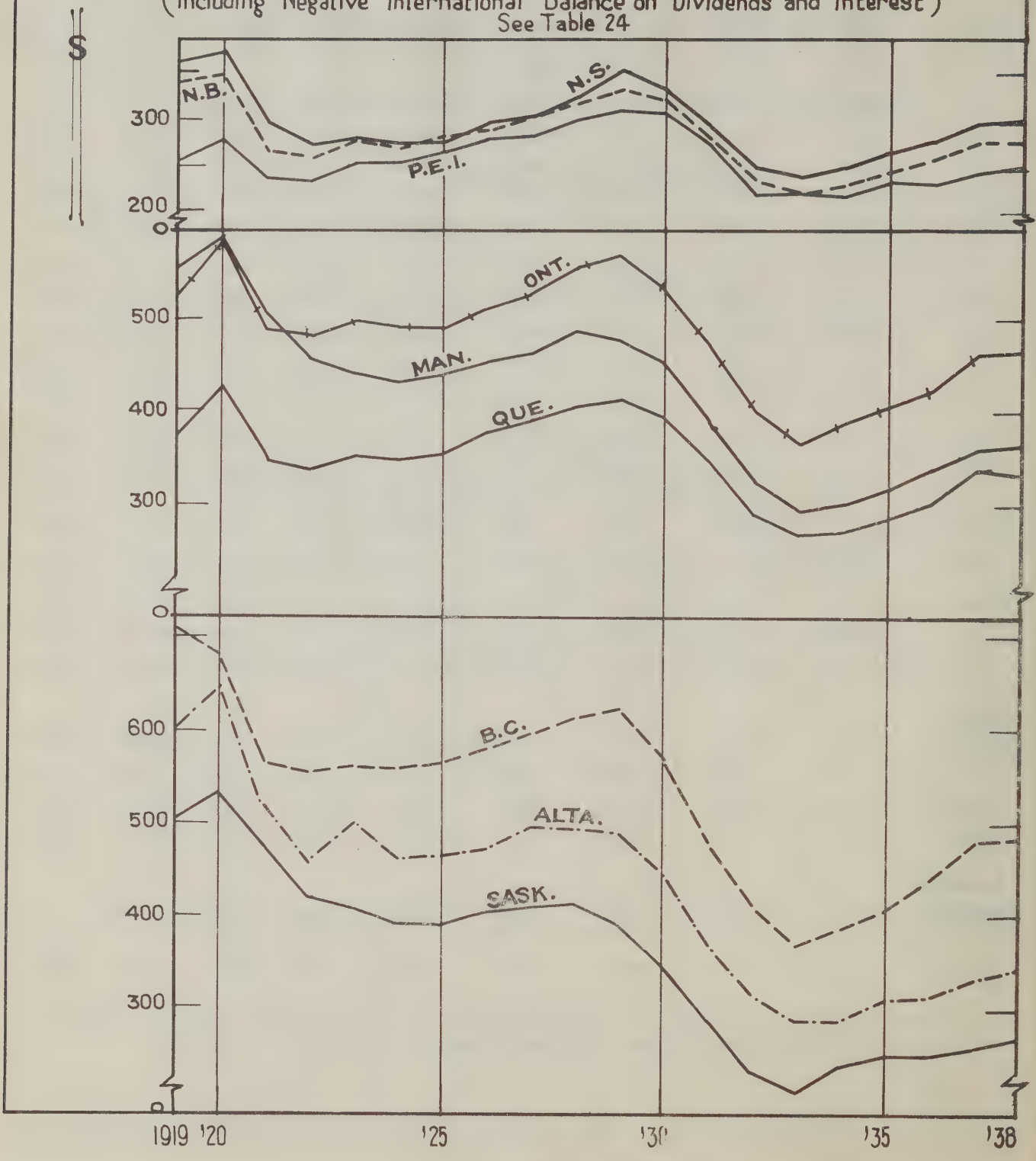


TABLE 24. - PER CAPITA INCOME PAYMENTS IN DOLLARS, CANADA AND THE PROVINCES, 1919-1938.

(Including negative international balance on dividends and interest)

Year	CANADA	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskat-chewan	Alberta	[x] British Columbia
1919	480	255	361	339	374	526	555	502	600	709
20	521	279	373	348	428	583	588	534	645	681
21	433	235	295	264	346	488	506	475	517	566
22	413	234	271	258	335	481	457	420	458	555
23	426	251	280	276	351	498	440	410	500	561
24	417	252	273	268	347	491	432	392	461	559
25	421	264	276	281	353	490	440	390	464	565
26	438	278	296	285	376	509	454	402	472	579
27	453	281	304	304	389	525	462	409	495	597
28	471	299	327	317	404	555	485	412	495	613
29	480	309	353	333	414	568	477	393	490	624
30	448	306	334	321	395	531	451	347	445	571
31	389	269	294	278	345	471	387	285	370	480
32	328	219	248	234	289	400	323	231	316	411
33	301	222	236	221	266	365	292	209	287	369
34	314	217	247	229	270	387	300	236	287	386
35	332	232	263	242	284	406	317	248	309	406
36	347	230	276	256	301	424	339	248	311	438
37	378	242	295	275	336	464	359	256	331	481
38	379	246	298	273	332	465	363	264	343	481
Averages										
1919-1938	408	256	295	280	347	481	421	353	430	532
1919-1928	447	263	306	294	370	515	482	435	511	599
1929-1938	370	249	284	266	323	448	361	272	349	465
P. C. Change										
1929-1938 / 1919-1928	-17.23	- 5.32	- 7.19	- 9.52	-12.70	-13.01	-25.10	-37.47	-31.70	-22.37

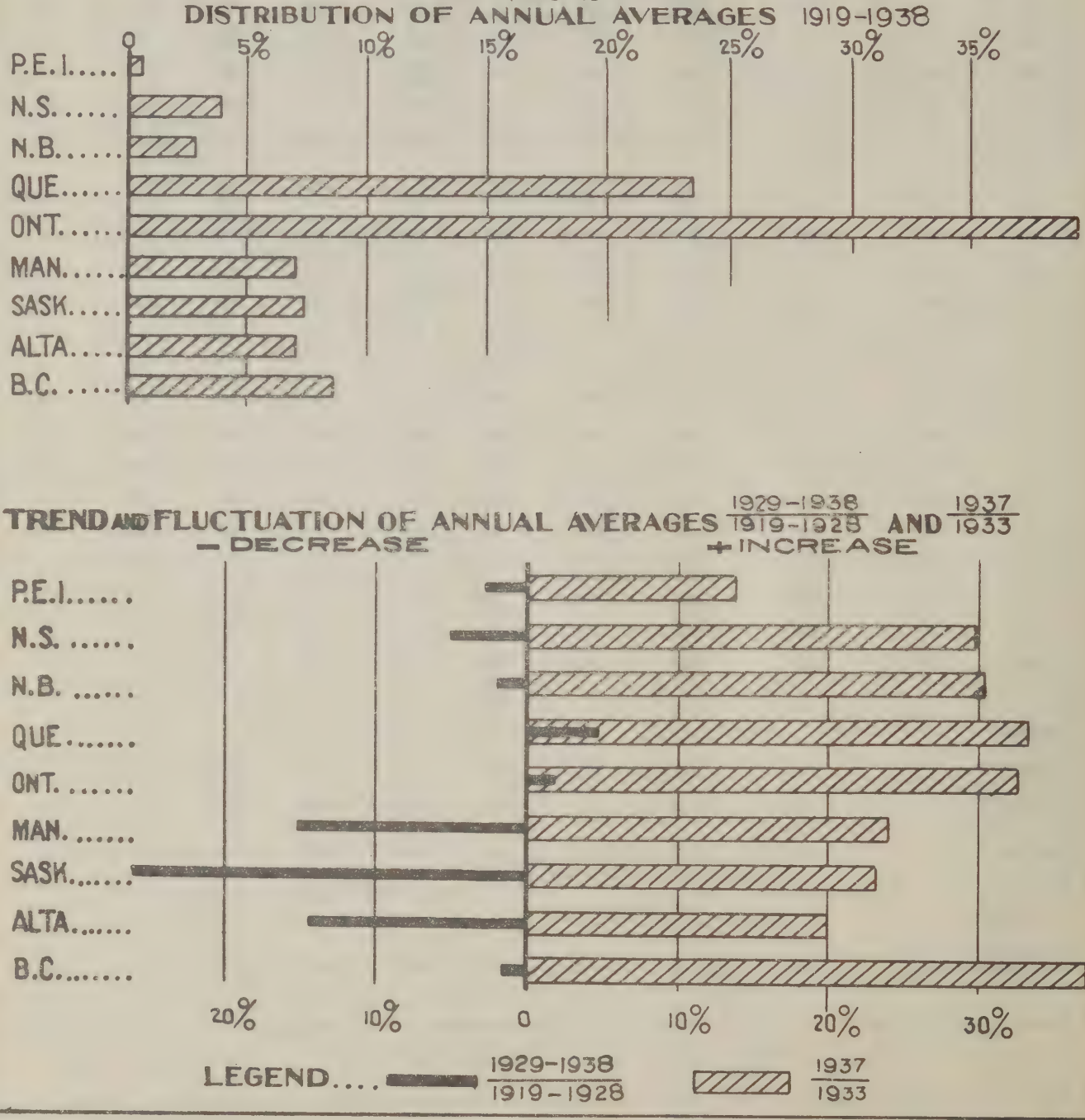
[x] Includes the Yukon and the North West Territories.

NATIONAL INCOME OF CANADA 1919-1938

PERCENTAGE DISTRIBUTION OF ANNUAL AVERAGE INCOME PAYMENTS 1919-1938 BY PROVINCES—FLUCTUATION OF ANNUAL AVERAGES 1919-1928 TO 1929-1938 AND 1933 TO 1937

(Including Negative International Balance on Dividends and Interest)

See Table 23



Section 6

Monthly Computation of National Income, 1935-40.

The monthly computation was prepared for the dual purpose of providing a preliminary measurement for each year pending the calculation of annual estimates, and to indicate the month-to-month changes in the creation of national income. Annual census results are not available for about sixteen months after the end of the period covered, causing considerable delay in estimating the annual totals by the normal method. While the source material necessary for developing monthly series is not so satisfactory either in quantity or quality as the information used for annual estimates, there are considerable data in the form of monthly indexes which indicate, with a fair degree of accuracy, changes in the national income throughout the year.

The method was somewhat similar to that suggested by Dr. Colin Clark in "National Income and Outlay", Chapter IX, page 194. Appropriate data on volume and price were used to establish the monthly fluctuations for each of the thirty groups. For the period from 1935 to the latest available year, the annual totals were used as objectives. Following is a list of the basic data utilized for the preparations of the index from January, 1935 to the present:

1. Commodity Producing Industries

Agriculture
- Live Stock Marketings.
- Grain Marketings Country Elevators.
- Creamery Butter Production.
- Factory Cheese Output.
- Prices Canadian Farm Products.

Forestry
- Forestry Production, Page 8. 1/
- Prices, Forest Origin, Raw.

Fisheries
- Exports, Fishery Products.

Trapping
- Exports of Furs.

Mining
- Mineral Production, Page 8. 1/
- Prices, Mineral Origin, Raw.

Electric Power
- Adjusted Employment.

1. Commodity Producing Industries (Con.)

Manufactures n.e.s.
- (a) Gross Production.
  - Manufacturing Production, Page 8.1/
  - Prices, Manufactured goods.
- (b) Cost of Materials.
  - Manufacturing Production, Page 8.1/
  - Prices Raw and Partly Manufactured.
- (c) Net Production.
  - (a - b)

Construction.
- (a) Gross Production.
  - Index of Employment.
- (b) Cost of Materials.
  - Index of Employment.
  - Prices, Building and Construction Materials.
- (c) Net Production.
  - (a - b)

Custom and Repair
- Employment All Industries.

1/ Monthly Review of Business Statistics.

TABLE 25. - DISTRIBUTION OF NATIONAL INCOME, IN THOUSAND DOLLARS, BY MONTHS AND ECONOMIC DIVISIONS, 1935-1940.

(Including negative international balance on dividends and interest)

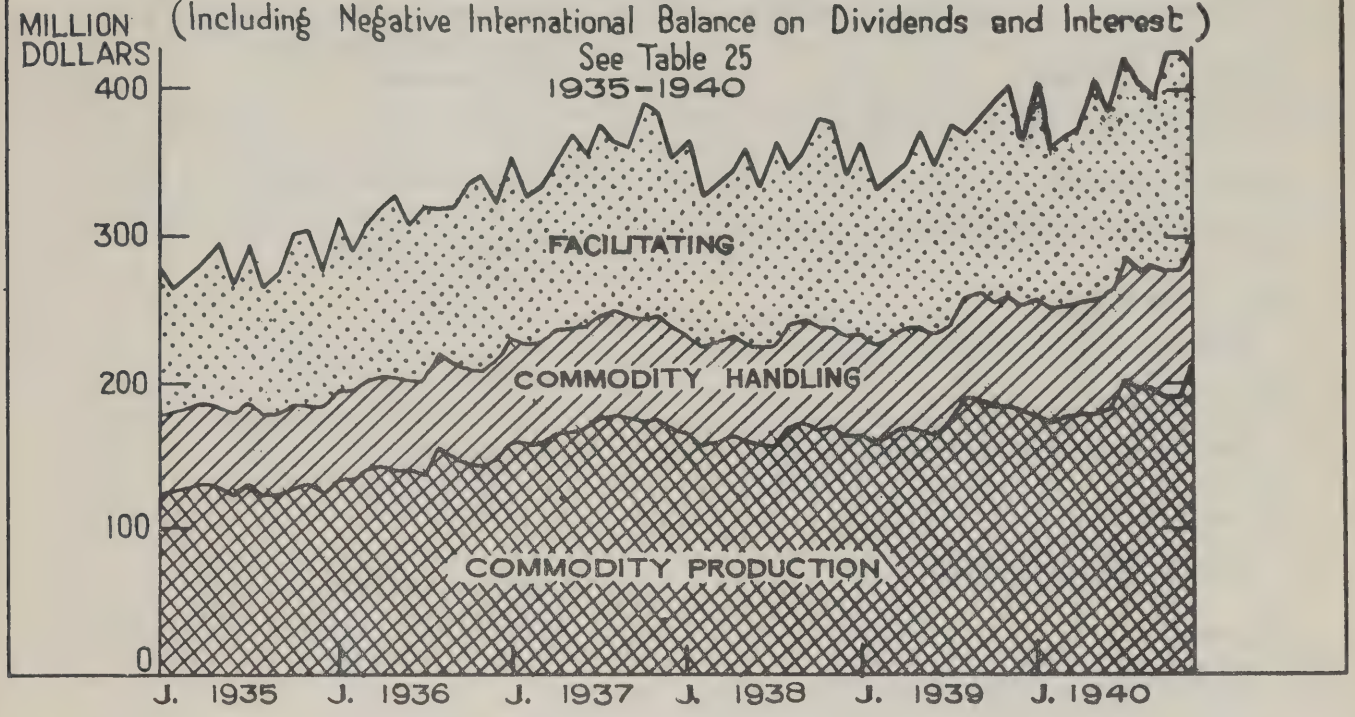
MONTH	NATIONAL INCOME						COMMODITY PRODUCING					
	1935	1936	1937	1938	1939	1940	1935	1936	1937	1938	1939	1940
January	279,393	313,085	355,828	366,999	365,628	404,884	122,949	134,624	161,291	164,504	164,061	177,761
February	263,999	289,785	329,044	328,263	333,434	360,075	125,097	135,323	158,585	157,342	158,402	171,819
March	274,582	306,176	337,187	335,590	342,247	367,651	129,204	140,404	159,328	160,446	164,735	176,925
April	281,568	320,405	352,377	344,507	351,019	375,309	130,815	144,270	165,570	165,024	169,659	178,147
May	296,475	328,156	371,949	361,284	372,303	402,974	129,004	140,704	166,212	159,602	167,367	178,308
June	268,752	308,674	355,823	335,205	349,824	381,519	122,996	141,127	168,983	157,480	163,958	181,407
July	292,883	320,732	378,509	367,316	378,074	420,643	130,234	137,877	175,644	157,275	170,730	202,712
August	265,029	319,019	365,202	346,651	370,178	404,714	122,002	157,380	179,352	171,352	189,270	195,189
September	276,026	319,920	361,034	356,278	382,997	393,213	123,291	148,509	177,520	172,577	187,752	194,654
October	301,553	336,577	392,985	381,720	393,793	426,681	128,876	145,183	174,407	167,721	182,999	192,310
November	304,059	341,097	386,932	378,277	401,738	427,677	129,682	144,360	175,783	169,263	183,946	193,048
December	277,055	325,367	355,343	344,306	367,928	418,929	124,845	149,301	168,270	162,967	179,946	210,473
Year	3,381,374	3,828,993	4,342,213	4,246,396	4,409,162	4,784,269	1,518,995	1,719,062	2,030,945	1,965,553	2,082,825	2,252,153

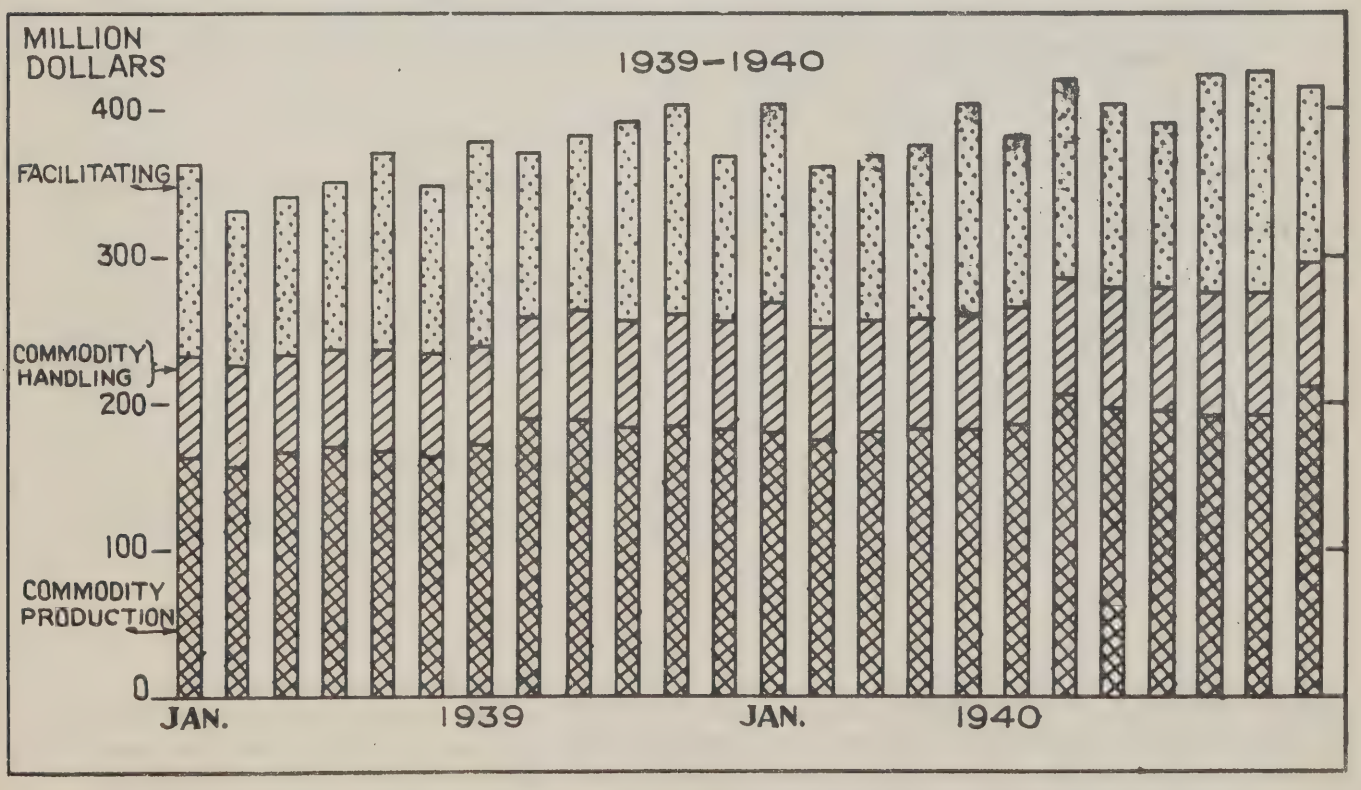
MONTH	COMMODITY HANDLING						FACILITATING					
	1935	1936	1937	1938	1939	1940	1935	1936	1937	1938	1939	1940
January	54,348	60,843	68,575	69,395	67,911	88,567	102,096	117,618	125,962	133,100	133,656	138,556
February	54,662	61,021	68,921	68,041	67,156	78,937	84,240	93,441	101,538	102,880	107,876	109,919
March	54,796	61,329	69,291	67,585	66,218	75,800	90,582	104,443	108,568	107,559	111,294	114,926
April	54,963	61,306	70,605	67,267	67,378	76,578	95,790	114,829	116,202	112,216	113,981	120,584
May	54,871	61,885	69,867	67,667	70,001	79,652	112,600	125,567	135,870	134,015	134,935	145,014
June	54,289	62,090	69,952	67,748	68,662	81,629	91,467	105,457	116,888	109,977	117,204	118,483
July	55,771	62,871	70,840	67,817	68,722	81,541	106,878	119,984	132,025	142,224	138,622	136,390
August	55,455	63,742	70,479	69,346	69,980	81,570	87,572	97,897	115,371	105,953	110,928	127,955
September	55,295	63,667	69,828	69,512	75,545	83,735	97,440	107,744	113,686	114,189	119,700	114,824
October	56,307	63,715	70,181	70,345	73,013	84,218	116,370	127,679	148,397	143,654	137,781	150,153
November	55,768	63,423	70,062	69,066	74,004	84,075	118,609	133,314	141,087	139,948	143,788	150,554
December	56,437	65,542	70,471	68,449	74,128	86,782	95,773	110,524	116,602	112,890	113,854	121,674
Year	662,962	751,434	839,072	822,238	842,718	983,084	1,199,417	1,358,497	1,472,196	1,458,605	1,483,619	1,549,032

NATIONAL INCOME OF CANADA 1935-1940

DISTRIBUTION OF NATIONAL INCOME BY MONTHS AND ECONOMIC DIVISIONS 1935-1940 AND 1939-1940

(Including Negative International Balance on Dividends and Interest)





2. Commodity Handling Industries

Steam Railways
Operating Revenues (Two Railways).

Electric Railways
Employment, Street Railways.

Water Transport
Employment, Shipping and Stevedoring.

Road Transport
Employment, Cartage.

Civil Aviation
Preliminary Annual Computation.

Storage
Cold Storage Holdings.

Express
Employment, Telegraph.

Telegraph
Employment, Telegraph.

Telephone
Employment, Telephone.

Retail Trade
Sales Index.
Employment.
Retail Prices.

Wholesale Trade
Sales Index.
Employment.
Wholesale Prices.

3. Facilitating Activities

Banking
Current Loans.
Security Holdings.
Employment.

Stock and Bond Dealers
Price Index.
Shares Traded.
Employment.

Insurance
Sales Life Insurance.
Employment.

Trust, Loan and Mortgage Companies and Real Estate
Employment, Stable Industries.

Government
Ordinary Expenditures.

Professional
Employment, Stable Industries.

Education
Straight Line Trend.

Service Other
Employment, All Industries.

From the original data for each industry, a monthly series was computed. The sum of the monthly series was divided by the annual income produced by the industry, and the constant so computed was used as a multiplier for each of the twelve series. The sum of the results for the industries in each of the three economic divisions of commodity production, handling and facilitating, was adjusted for the international balance of payments in dividends and bond interest.

In constructing the monthly estimates of the national income the annual compilation was used as a basis of weighting. As explained in Chapter II, there is a three-fold approach to national income, depending upon whether the money flow is measured at the point of production, of payment to individuals or at the point of disposal of income for consumption goods and personal savings. The three avenues of approach should result in estimates very similar in amount, provided that the income paid to individuals includes indirect accruals in the form of positive or negative savings of enterprises. The total, in theory at least, is exactly equal to income produced. Furthermore, income received by individuals is normally expended as cost of living, transferred to other individuals in the form of gifts or invested in equipment for further production.

The monthly estimates resemble in content the annual totals, which in turn are compiled mainly on the basis of income produced and income paid to individuals, including savings of enterprises. The balance of dividends and interest paid to external holders is deducted in making up both series of estimates. Since payments in kind represent a non-monetary but nevertheless effective command over goods and services, they are included in the monthly estimates. As the estimates are designed to include most of the elements in the total income currently flowing to or entering into the possession of individuals, the series should yield a fairly satisfactory indicator of the buying capacity of consumers.

The monthly income estimates measure changes in the dollar volume of income, and fluctuations in the level of prices exert an important influence on the income measurements. A considerable part of the recovery from January 1935 to the first half of 1940 can be accounted for by price changes. The index of the cost of living is the most useful of the available factors for converting the dollar income figures into real income.

The appreciable advance in the national income of Canada over the last six years is indicated by Chart 33 and Table 25. The gain during 1935 was of moderate proportions, fluctuations centering around the level of $300 million per month. Marked improvement was recorded in the years 1936, 1937 and 1939, while reaction was shown during 1938. The outbreak of war occasioned an expansion of activity in the latter part of 1939, and the whole of 1940. The commodity-producing industries contributed heavily to the rise in the national income during the period covered by the monthly estimates. A smooth upward trend characterized the commodity-handling group, while considerable minor fluctuations were shown in the facilitating industries against a background of moderate advance.

Section 7.

Disposal of Family Income.

The necessity to consume is the basis of the economic system. Food, clothing, shelter, education and numerous other commodities or services are sought by consumers. These wants, provided that consumers are in a position to make them effective, are reflected in economic activity. The nature of consumers' wants determines the pattern of production. Consequently, the expenditure of the consumer is the chief influence in directing the course of the economy.

The importance of consumer purchasing power in the modern economy has become a topic of general interest during the last few years. Canadians have at their command an abundance of natural resources, and considerable capacity to convert their natural wealth into useful goods and services. Industry, however, must produce the particular goods and services which consumers desire to purchase and must make the particular capital investment required to provide for future consumption demands. It should be known what incomes the nation's consumers receive and how they are utilized.

In 1938, a survey was made covering 1,439 urban wage-earning families throughout Canada. These were classified according to income, the first group earning from $100-$199 per person per year, the second $200-$299, etc., with the sixth and final group having a per capita income of $600 or over. A complementary survey was made of 1,692 farm families. Owing, however, to the difficulties of gauging the income of farmers, these were classified according to living expenditures, the most frugal of the four sections spending $100-$199 per capita yearly, and the heaviest spenders more than $400 per person.

Before dealing with the numerous differences between the expenditure of urban and rural incomes, a few tendencies equally evident in both groups may be mentioned. One of these was a marked decline, as incomes increased, in the proportionate expenditure on food. The proportion expended for fuel and light also dropped in both categories. There was not, in either rural or urban districts, a rise in the purchases of food, fuel and lighting commensurate with increasing incomes.

Certain expenses, on the other hand, increased in both the rural and the urban samples more than in proportion to the rise in incomes. Household operation claimed a steadily increasing proportion of the progressively higher incomes. The percentage spent on recreation showed a moderate increase in both cases, while the share claimed by transportation also mounted in both the rural and urban budgets. In this case, however, the urban transportation expenses rose steeply from a low percentage of total expenses to a very high one. Transportation's share in the rural budget was substantial in all income groups, a slight percentage increase having been shown in the higher brackets. This may be due to the fact that most farm families have an automobile of necessity, but seldom a luxurious one.

We may now pass to some of the striking differences in rural and urban expenditure. Foods claimed about 41 per cent of the lowest urban incomes listed and 21 per cent of the highest. The rural share was approximately 22 per cent in the lowest class, and 13 per cent in the highest. Although the same tendency for food expenditure to show a relative drop as incomes rose was thus observable in both locations, the proportion of all urban incomes so spent was much greater than was the case on the farms. This may be mainly attributed, no doubt, to the manner in which the two classes live. While the urban population devote a certain amount of their time to making money for the purchase of food, the farm families spend a considerable portion of their time raising food which they consume at home. This outlay of time and effort does not, of course, show in their monetary "living expenditure".

Secondly, the share of urban incomes spent for "shelter" was in all groups quite close to 20 per cent, variations being small. The farm outlay was only 4.3 per cent to 5.6 per cent, increasing a little in the more freely spending groups. This is mainly due to the heavy outlay for rent among the urban workers. The share of "fuel and light" in the urban incomes is also slightly greater than in the rural, perhaps because many farmers are able to use largely their own wood as fuel.

In the share of income spent for clothing, the situation seems to be reversed. The urban proportion varies from 10 per cent to about 12 per cent, with no marked trend either upward or downward as incomes rise. Clothing totalled 21.3 per cent of the lowest group of farm expenditures, dropping to 14.5 per cent in the highest group. The explanation here seemed to be that, since the urban worker must depend on his monetary income for supplying most of his needs, while the farmer feeds and shelters himself to a great extent independently of cash outlay, the expenditure for clothing which is roughly equivalent in both investigations has a more important place in the farmer's cash budget. Higher small town prices for certain articles might have some influence here. That the proportionate expenditure on clothing falls off with higher rural incomes, which is not the case with city dwellers, would suggest that there is not the tendency, on the farms, to own good clothes for the sake of fashion which is so noticeable in the cities.

Similarly, the share claimed by household operation, (furniture and household equipment), is much greater on the farms than in the cities. In both locations, the proportion increases with higher incomes -- in the cities from 5.3 per cent to 10.8 per cent, in rural areas from 13.9 per cent to 18.5 per cent. This is probably partly due to the fact that, as with the clothing item, furnishing and equipping the home is a more important factor in the farmer's cash expenditure than in that of the urban worker. There are also many implements in the rural home which would not be needed in the cities.

The "health" expenses showed a marked tendency in the same direction, claiming a share of the farm budget from two to almost three times as great relatively as that allotted in the cities.

TABLE 26. - COMPARISON OF URBAN AND FARM FAMILY LIVING EXPENDITURES, 1938, ACCORDING TO ANNUAL INCOME⊕ PER PERSON.

(Prepared by H.F. Greenway, M.A., Prices Statistician and Officer in Charge of the Nutrition and Family Living Expenditures Investigation.)

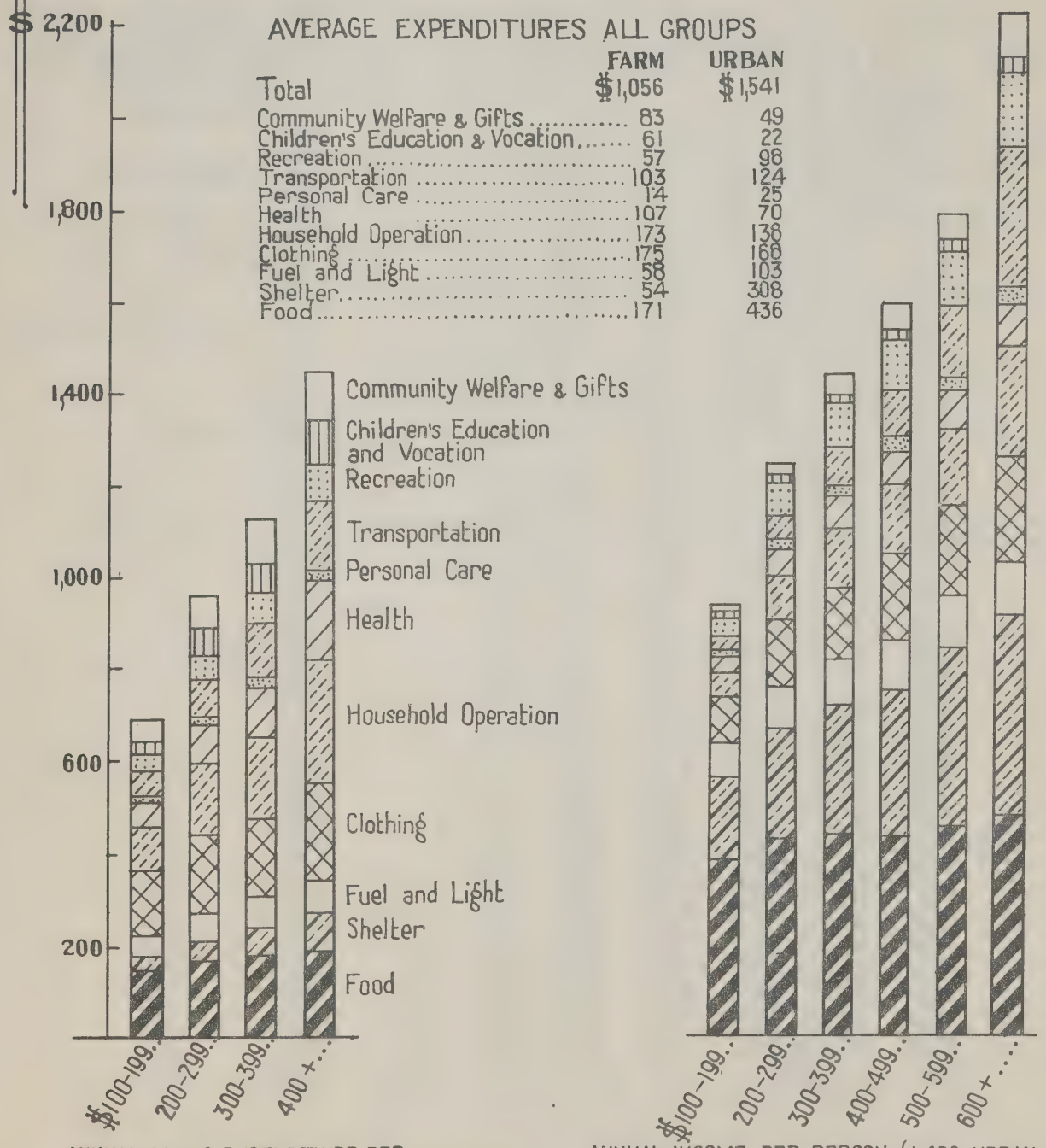
	1,439 Urban Wage-Earner Families						1,692 Farm Families			
	Annual Income per Person						Annual Living Expenditure per Person			
	$100-199	$200-299	$300-399	$400-499	$500-599	$600 +	$100-199	$200-299	$300-399	$400 +
	Dollars						Dollars			
Food	383	431	434	434	455	481	150	165	177	191
Shelter	183	235	283	323	387	438	30	44	60	81
Fuel and Light	80	95	102	109	113	118	40	59	64	71
Clothing	94	142	159	189	197	224	148	171	170	210
Household Operation	50	97	127	150	166	239	96	154	177	266
Health	37	58	68	74	84	98	53	87	112	178
Personal Care	16	22	25	28	29	33	9	13	16	17
Transportation	25	53	86	107	158	313	56	86	120	149
Recreation	44	69	92	108	118	155	33	49	68	78
Children's Education and Vocation	10	16	23	24	22	39	32	57	56	99
Community Welfare and Gifts	15	27	40	54	62	95	45	75	106	106
Total	937	1,245	1,439	1,600	1,791	2,233	692	960	1,126	1,446
	Percentage						Percentage			
Food	40.9	34.6	30.2	27.1	25.4	21.5	21.7	17.2	15.8	13.2
Shelter	19.5	18.9	19.6	20.2	21.6	19.6	4.3	4.6	5.3	5.6
Fuel and Light	8.6	7.6	7.1	6.8	6.3	5.3	5.8	6.1	5.7	4.9
Clothing	10.0	11.4	11.0	11.9	11.0	10.0	21.3	17.8	15.1	14.5
Household Operation	5.3	7.7	8.9	9.4	9.3	10.8	13.9	16.0	15.7	18.5
Health	3.9	4.7	4.7	4.6	4.7	4.4	7.7	9.1	9.9	12.3
Personal Care	1.7	1.8	1.8	1.7	1.6	1.5	1.3	1.4	1.4	1.2
Transportation	2.7	4.2	6.0	6.7	8.8	14.0	8.1	9.0	10.7	10.3
Recreation	4.7	5.6	6.4	6.7	6.6	6.9	4.8	5.1	6.0	5.4
Children's Education and Vocation	1.1	1.3	1.6	1.5	1.2	1.7	4.6	5.9	5.0	6.8
Community Welfare and Gifts	1.6	2.2	2.7	3.4	3.5	4.3	6.5	7.8	9.4	7.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

⊕ Expenditure per Person for Farm Families. Income data not collected.

NATIONAL INCOME OF CANADA 1919-1938

PER CAPITA DISTRIBUTION 1938, IN CURRENT DOLLARS, OF FARM LIVING EXPENDITURE BY AMOUNTS, AND OF URBAN WAGE-EARNER EXPENDITURE BY INCOME GROUPS

See Table 26



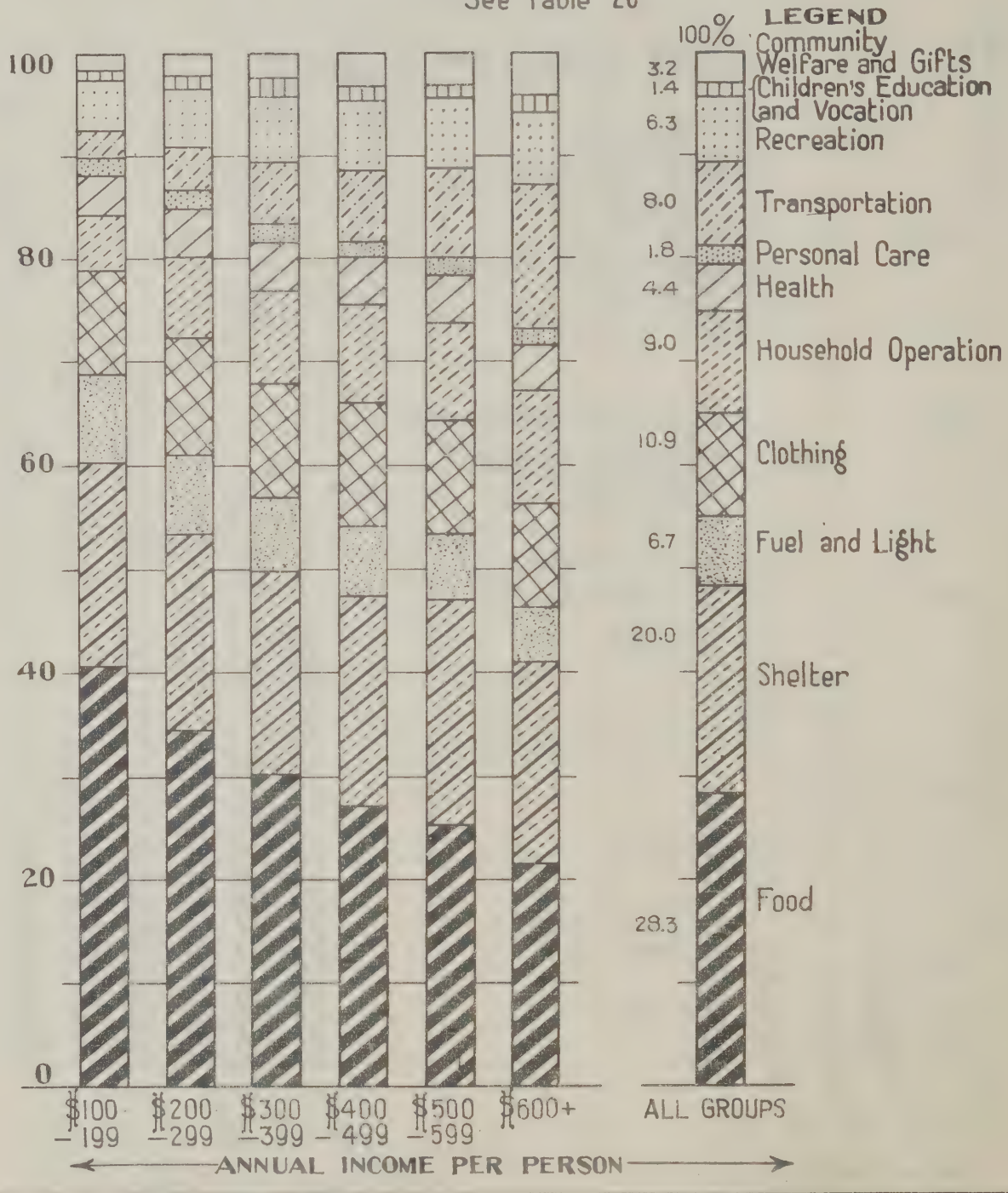
ANNUAL LIVING EXPENDITURE PER PERSON (1,692 FARM FAMILIES)

ANNUAL INCOME PER PERSON (1,439 URBAN WAGE-EARNER FAMILIES)

NATIONAL INCOME OF CANADA 1919-1939

DISTRIBUTION OF THE LIVING EXPENDITURES 1938 OF 1,439 URBAN WAGE-EARNER FAMILIES IN PERCENTAGES BY GROUPS ON THE BASIS OF ANNUAL INCOME PER PERSON

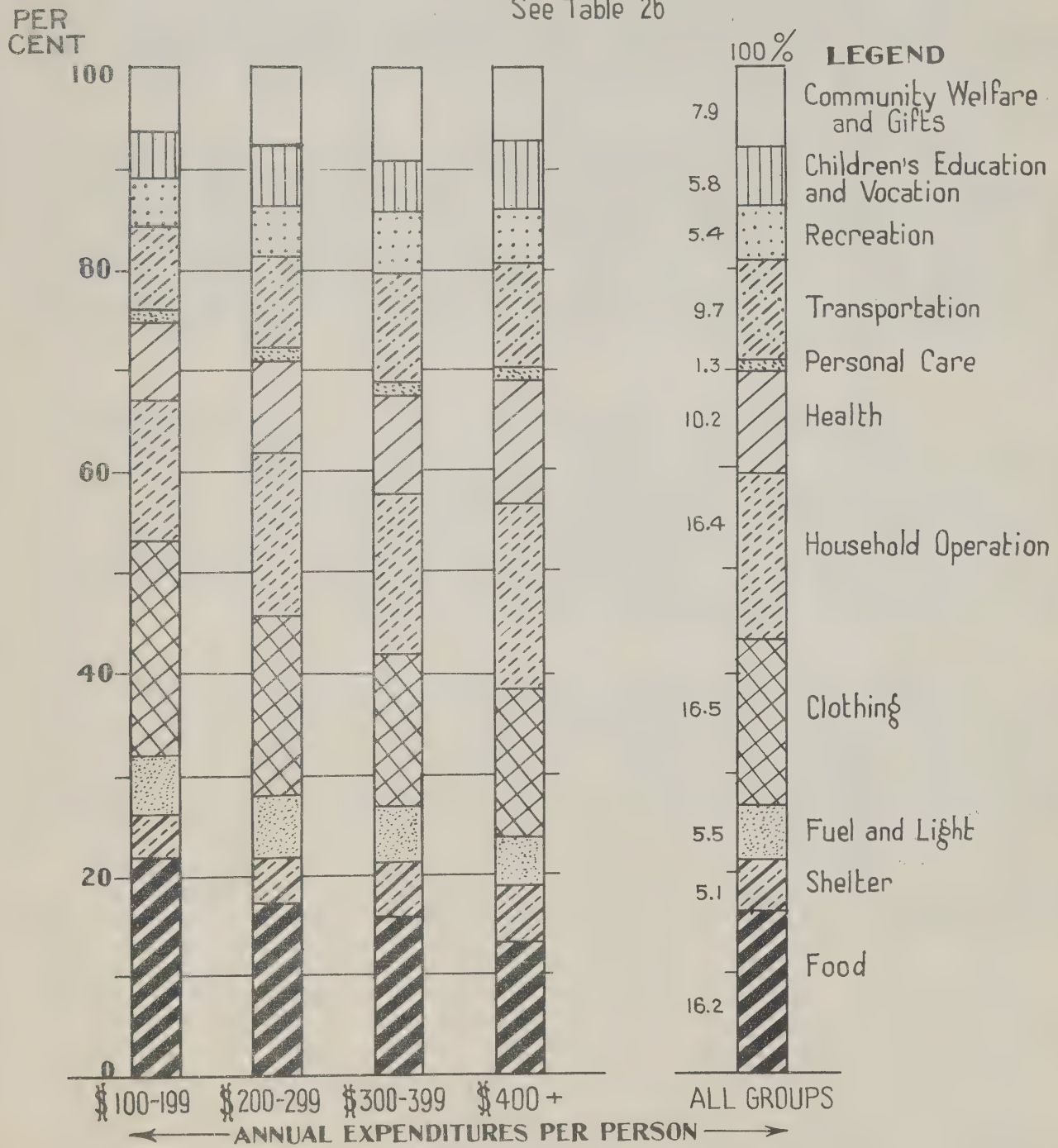
See Table 26



NATIONAL INCOME OF CANADA 1919-1938

DISTRIBUTION OF THE LIVING EXPENDITURES 1938, OF 1,692 FARM FAMILIES IN PERCENTAGES, BY GROUPS ON THE BASIS OF ANNUAL LIVING EXPENDITURES PER PERSON

See Table 26



The relative transportation expenses have already been touched on. The proportion going for recreation did not differ widely as between cities and farms, and showed fairly similar gradual increases, although at the top of the farm scale the relative share dropped a little. This might be due to the lesser opportunities for fashionable and expensive amusements in the rural districts.

Children's education expenditures were also proportionately much heavier in rural than in urban areas. In both categories, the share going for education was as usual, somewhat greater in the higher income groups than in the lower.

Community welfare and gifts, on the farms, commenced at the high proportion of 6.5 per cent of the total money expenditure, and rose relatively little in the higher groups, dropping in the highest group from 9.4 per cent to 7.3 per cent. In the urban areas, they showed a gradual, steady rise from 1.6 per cent to 4.3 per cent. This may reflect the greater necessity for the individuals of a rural community to help their less fortunate members, and the fact that a large share of the burden must often fall on farmers whose own incomes are very moderate.

In the last comparison, of course, as in the previous cases, it is necessary to remember that the farmer's cash expenditure does not represent the entire consumption of his family, as does the cash expenditure of the urban worker. Much of the farmer's food and shelter is secured directly by his own labour, and these items are, therefore, relatively unimportant in his cash budget. Many of the other items, therefore, bulk relatively larger. On the other hand, rural living conditions compel heavy cash expenditure on certain items, such as transportation and children's education.

Finally, there are fundamental differences between the two surveys. The rural study collated the cash expenditure of the farm families, which would not be, in any given case, nearly as great as that of an urban family on the same living standard. There is the additional fact that the urban families are classified according to cash income. This would, in the lowest categories, be about equal to cash expenditure, (or possibly even below it), and distinctly higher than the cash expenditure in the higher groups. It is, therefore, very difficult to say which of the urban and rural categories have even roughly equivalent living standards. Any conclusions drawn from these statistics ought to be made with all these limitations in mind.

Section 8.

National Income in Relation to Other Economic Factors.

The analysis of the relationship of important economic factors to the national income naturally resolves itself into two different methods of approach. Interest is mainly centred on the short-term movements technically known as "fluctuations", as contrasted with the long-term or structural changes usually referred to as "trends".

The procedure used here is, by measuring the long-term trend by mathematical process, to eliminate from the original data the effect of such influences, leaving the short-term fluctuations for further analysis. If we compare a current statistical series with the standing of twenty years ago we are dealing with long-period causes. The productivity of natural resources, the growth of the population, and skill of the gainfully occupied, as well as the availability of external markets, are all examples of long-period causes influencing national income. In this section the connection between seven economic factors and the national income will be considered.

Capital Formation

Owing to the emphasis placed on gross capital formation in recent economic literature, a tentative estimate was made for the period from 1919 to 1937. The gross output of the firms engaged in producing industrial equipment was taken as a starting point. The classification of external trade according to purpose was useful in determining the flow of producers' durable commodities across our international boundaries. Considerable adjustment of the producers' equipment group was necessary for the purpose of placing the totals on the required basis. Exports were deducted from the sum of the production and imports in order to arrive at an estimate of the commodities made available. A percentage was added to take care of freight charges and trade markups. The adjustment for change in inventories, on account of lack of data, was limited to manufactures and trade. An estimate of contracts awarded was taken as the contribution of the construction industry. The annual increase or decrease in international claims and changes in metallic reserves completed the study.

The importance of capital formation as a feature of economic activity has long been recognized. Income received by individuals is mainly disbursed in two ways -- for living expenses and for savings. Thus the money flow from consumers to producers may be regarded as divided into two streams, of which savings are devoted to the expansion of plant and equipment. An individual, however, who adds to his private wealth by saving, that is, by consuming less than the whole of his income, does not directly bring about the production of real capital. Incomes are derived from producing consumption goods or from producing investment goods. Income payments are spent on consumption goods or saved. Consequently, for the community as a whole, the rate of saving is equal in the long run to the rate of investment. While the investment money flow is normally far less than that arising from payment for consumption

goods, the wider fluctuation of the former results in greater significance for the interpretation of current economic conditions.

At an early stage in many periods of prosperity, simultaneous over-commitments for expansion of industrial equipment are made in most branches of industry. Each such commitment through credit extension involves the creation of purchasing power. The process of extending commitments, expanding credit and rising prices continues until it is checked by shortage of credit facilities or until experienced business men see danger in the further expansion of production facilities.

An annual index of gross capital formation was constructed, based on 1926. From 1919 to 1937, it showed a yearly increment of 0.95 points, as contrasted with a decline of 0.84 in the index of national income. The fluctuations were of considerable dimensions, as shown by a standard deviation of 24.49. Correlation with the national income was 0.91, representing a closer correspondence than is usually encountered between economic factors. The results of this analysis are shown in Tables 27 and 28 and Chart 37.

Statistics of new business obtained by the construction industry in the form of contracts awarded presents a basis for forecasting and constitutes raw material for the study of the whole problem of fluctuations. Contracts awarded measure with considerable precision the expansion and contraction of construction activities. Increased construction programmes are bound up with increased productivity in other lines of industry and with trends in family life and expenditures which are made possible by larger incomes. Increased savings permit enlarged construction activity to meet increased demand and at the same time stimulate construction projects as profitable investments.

The most striking developments in the field during the inter-war period, namely, electric power plants and highway construction, were conditioned by technical imporvements, rising living standards and large surplus funds available for capital investment. The standing of the building industry is regarded as a barometer of the general trend of economic conditions. The expenditure of public funds on a wide variety of construction projects in the last decade has affected the trend of employment in the industry.

The annual decrease in the index of contracts over the twenty years was 1.65 points. The standard deviation, measuring the extent of fluctuation, was relatively high at 32.1. Correlation with the national income was represented by a coefficient of 0.77. This figure, complying with general expectations, was large enough to be significant.

International Credits - From the viewpoint of a single country, an excess of exports over imports has all the characteristics of investment. Incomes earned by selling goods to foreigners, similar to incomes earned by making capital goods, add to the demand for home-produced consumption goods.

TABLE 27. - NATIONAL INCOME AND OTHER ECONOMIC FACTORS, 1919-1938, IN MILLION DOLLARS.

Year	National Income	Estimate of Gross Formation of Capital	Construction Contracts Awarded	International Credits	Exports (ex.gold)	Imports of Merchandise	Money Supply	Outstanding Government Debt
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1919	4,087	1,015	190	1,499	1,295	941	2,191	4,471
20	4,614	970	256	1,565	1,303	1,337	2,342	4,537
21	3,735	325	240	1,071	867	799	2,175	4,833
22	3,762	655	332	1,151	898	762	1,983	5,187
23	3,945	951	314	1,310	1,029	903	1,990	5,289
24	3,854	836	276	1,354	1,071	808	2,001	5,442
25	4,161	1,124	298	1,592	1,283	890	2,059	5,335
26	4,494	1,213	373	1,662	1,277	1,008	2,151	5,403
27	4,682	1,256	419	1,734	1,231	1,087	2,274	5,446
28	5,138	1,576	472	1,962	1,364	1,222	2,452	5,502
29	5,149	1,299	577	1,767	1,178	1,299	2,497	5,691
30	4,326	1,090	457	1,375	883	1,008	2,326	6,115
31	3,498.	799	315	1,082	600	628	2,274	6,527
32	2,893	619	133	893	498	453	2,121	6,770
33	2,795	573	97	844	535	401	2,106	7,023
34	3,171	779	126	1,036	656	513	2,136	7,252
35	3,381	1,005	160	1,217	738	550	2,272	7,514
36	3,829	1,238	163	1,509	951	635	2,422	7,530
37	4,342	1,330	224	1,665	1,012	809	2,583	7,697
38	4,246		187	1,455	849	677	2,650	

Sources - (a), (b), (e), (f) and (g), Dominion Bureau of Statistics; (c) MacLean Building Review; (d) Dominion Monetary Policy, prepared for the Royal Commission on Dominion-Provincial Relations, page 91, column XV.
(h) 1921, 1925-1937 inclusive, Appendix 1 and Book III Documentation, Report of the Royal Commission on Dominion-Provincial Relations. Other interpolated from statistics in Canada Year Book.

This is effected without adding to the supply currently available for consumption, while home-earned income expended upon foreign-produced goods is subtracted from the demand for home-produced goods. Thus, an increase in exports or a decrease in imports adds to the national income, creates secondary employment and brings about an increase in home income and saving. The influence of an active balance of trade upon internal activity is similar to that of an expansion in industrial plant and equipment. The balance of trade is, of course, supplemented by other transactions on current account. Returns on investments held elsewhere increase the national income of the home country, exactly as would an excess of exports over imports. The expenditures of tourists while in another country likewise add to the income of the country in which the money is spent. Great Britain also profited greatly, prior to the present war, by the payments made by various countries for the services of her mercantile marine.

Incomes are normally disposed of in three distinct ways. The largest portion is spent on goods and services produced within the country, but as incomes advance, there is an increasing tendency to purchase imported products. The third choice is to add to personal savings by accumulating bank deposits and investing in securities or mortgages. Savings usually are utilized directly or indirectly in expanding capital equipment.

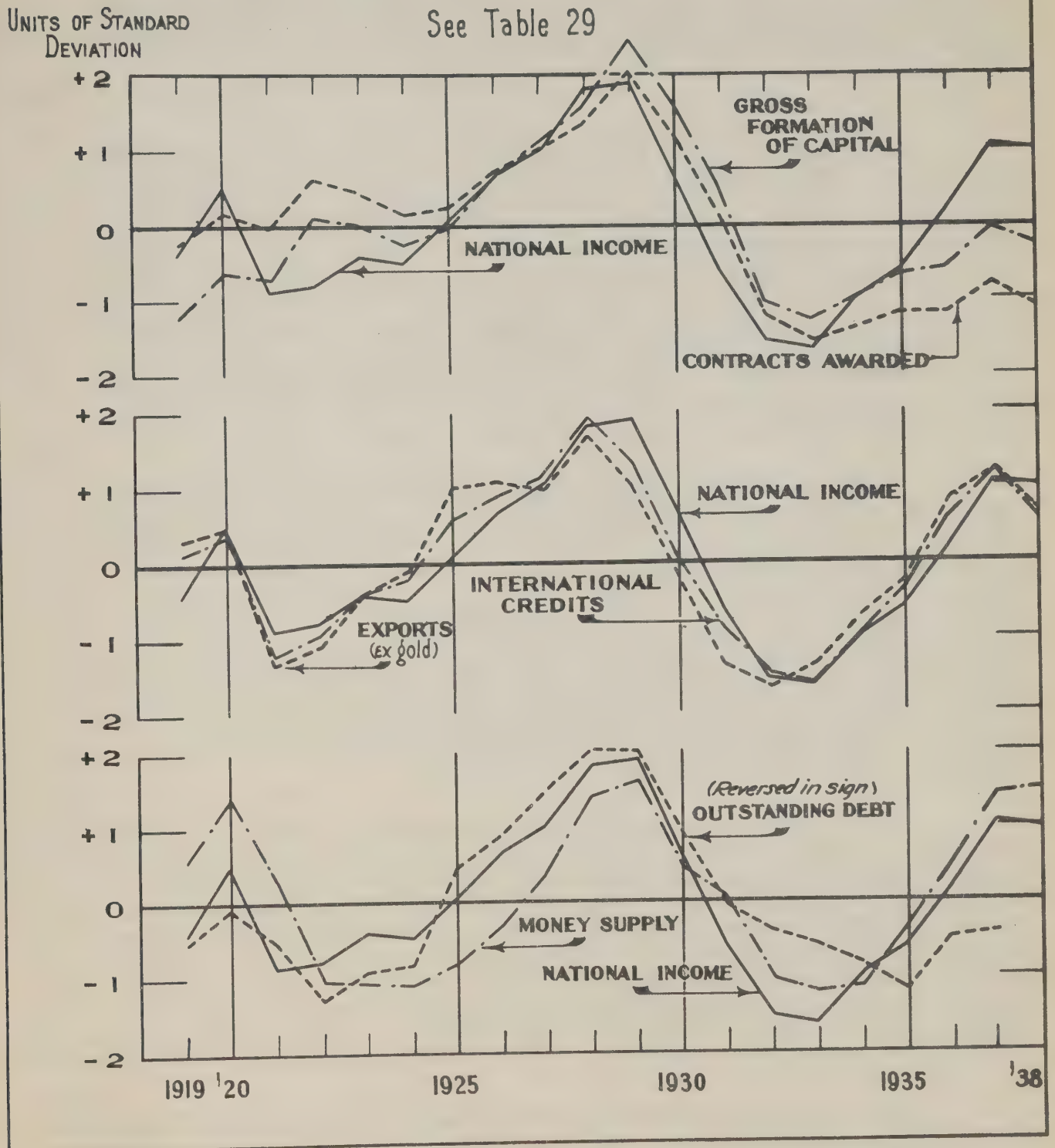
The manner in which additional income is allotted has an important bearing on future changes in national income. The more extensive purchase of imported consumption goods tends to reduce incomes. The purchase of non-durable goods produced within the country is relatively stable, since a large proportion of these goods is necessary in the day-to-day life of the average man. The level of savings and investment is much more erratic, dropping very low in depressed periods when there is no incentive to expand productive equipment. Investment is a major vitalizing force in accelerating the economy in a sense that expenditure on consumption goods is not. The correlation of international credits with national income was closer than that shown by any other of the seven factors considered in this connection. The annual decrement over the twenty years was 0.52, the standard deviation 18.27 and the coefficient of correlation no less than 0.94.

Deficit Financing - Deficit financing of governments is regarded as one of the three main lines of expenditure tending to expand national income. The investor, private or institutional, has a choice as to whether savings will be entrusted to corporations or to government. Provided that the money is used by government for the expansion of productive equipment or for the provision of armaments, an accelerating influence on national income may be anticipated. The effect is similar to that produced by capital expansion on private initiative. The main difference between the two classes of expenditure is that the former is not subject to the profit motive in the same direct way. The manufacture of munitions differs from the production of producers' goods in that the ultimate object is defence rather than an expansion in the output of goods for use. The demand for munitions is not subject to the usual economic laws, and may largely vanish in a few days.

NATIONAL INCOME OF CANADA 1919-1938

NATIONAL INCOME COMPARED WITH SIX MAJOR ECONOMIC FACTORS EXPRESSED IN TERMS OF STANDARD DEVIATION

See Table 29



A rough measure of governmental deficit financing was obtained by adapting the statistics of outstanding debt. The debt of the Dominion, provincial and municipal authorities was given for certain years in Book III of the report of the Dominion-Provincial Relations Commission. Remaining years of the period were interpolated by means of data from the Canada Year Book. Outstanding debt showed an inverse correlation of 0.81 with national income. Upon plotting as in Chart 37, it is evident that the reciprocal of deficit financing would show significant positive correlation.

Money Supply - It is estimated that the total supply of money outstanding in Canada averaged about $2,250 million during the twenty years. This was composed of about $203 million in currency, including bank notes and subsidiary coin, outside of banks, and the bank deposits of the chartered banks amounting to nearly $2,047 million. The currency consequently was only a small proportion of the total money supply, amounting to about 9 per cent. Deposits perform a function similar to that of currency, since they are carried as book entries in banking records and are capable of being transferred in these records from the name of one depositor to that of another through cheques. A discussion of the main components of the money supply is presented in the annual report of "Bank Debits and Equation of Exchange, 1919-1939".

It is evident from Table 28 and Chart 37 that wide variations in the volume of money outstanding take place within relatively short periods of time. Such changes help to alter the buying power of consumers. A tentative estimate of retail sales correlates closely during the inter-war period with the money supply as here defined. It is logical that retail purchases should conform to the supply of money in the form of cash and deposits by which such buying is transacted. The most important part of the supply of money is represented by bank deposits and it is partly through the action of the banks that the amount is controlled. Open market operations of the central bank have an accelerating influence on chartered bank operations. Deposits are also partly dependent on loans contracted by mutual agreement between banks and their clients.

Bank credit is by far the most important channel for the provision of a supply of money. When the banking system expands its loans and investments, thereby increasing the money supply, it is providing individuals, enterprises or government units with additional purchasing power, without at the same time reducing the buying power of anyone else. Likewise, when banking credit is curtailed, the purchasing power of some economic units is reduced, without any corresponding increase in the buying power of other units. The magnitude of the effect of such changes is suggested by the fact that between 1929 and 1933, the money supply was reduced by $391 million and again expanded by $544 million from the latter year to 1938.

The inter-war trend of the Canadian money supply advanced at the rate of $14.2 million per year. The standard deviation, a measure of variability, registered a relatively low point at 7.33 in terms of the index on the base of 1926.

TABLE 28. - NATIONAL INCOME AND OTHER ECONOMIC FACTORS, 1919-1938, IN INDEX NUMBERS, 1926=100.

Year	National Income	Estimate of Gross Formation of Capital	Construction Contracts Awarded	International Credits	Exports (ex.gold)	Imports of Merchandise	Money Supply	Outstanding Government Debt
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1919	90.9	83.7	50.9	90.2	101.4	93.4	101.9	82.8
20	102.7	80.0	68.6	94.2	102.0	132.6	108.9	84.0
21	83.1	26.8	64.3	64.4	67.9	79.3	101.1	89.5
22	83.7	54.0	89.0	69.3	70.3	75.6	92.2	96.0
23	87.8	78.4	84.2	78.8	80.6	89.6	92.5	97.9
24	85.8	68.9	74.0	81.5	83.9	80.2	93.0	100.7
25	92.6	92.7	79.9	95.8	100.5	88.3	95.7	98.7
26	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
27	104.2	103.5	112.3	104.3	96.4	107.8	105.7	100.8
28	114.3	129.9	126.5	118.1	106.8	121.2	114.0	101.8
29	114.6	107.1	154.7	106.3	92.2	128.8	116.1	105.3
30	96.2	89.9	122.5	82.7	69.1	100.0	108.1	113.2
31	77.8	65.9	84.5	65.1	47.0	62.3	105.7	120.8
32	64.4	51.0	35.7	53.7	39.0	44.9	98.6	125.3
33	62.2	47.2	26.0	50.8	41.9	39.8	97.9	130.0
34	70.6	64.2	33.8	62.3	51.4	50.9	99.3	134.2
35	75.2	82.9	42.9	73.2	57.8	54.6	105.6	139.1
36	85.2	102.1	43.7	90.8	74.5	63.0	112.6	139.4
37	96.6	109.6	60.1	100.2	79.2	80.3	120.1	142.5
38	94.5		50.1	87.5	66.5	67.2	123.2	
Annual Increment	- 0.84	+ 0.95	+ 1.65	- 0.52	- 2.11	- 2.53	+ 0.66	+ 3.35
Standard Deviation	13.82	24.49	32.11	18.27	17.65	22.10	7.33	4.30
Correlation with N.I.		+ 0.91	+ 0.77	+ 0.94	+ 0.88	+ 0.82	+ 0.83	- 0.81

The Multiplier - Two variations of the multiplier principle are presented in the economic literature of recent years. One is based upon employment and the other upon money income. The analysis in either case takes new investment in a particular "production goods" industry as a starting point. Such an investment creates a certain amount of direct employment. By increasing the incomes of those given immediate employment, it will also stimulate the demand for the products of other industries. Greater prosperity in the other industries brings further increases in employment and in incomes.

The "employment" conception of the multiplier defines it as the ratio of the total volume of employment, direct and secondary, created by such an investment, to the initial employment created directly. The "money income" conception regards the multiplier as the ratio of the total income created as a result of the investment to the direct or primary income bound up with the initial expenditure.

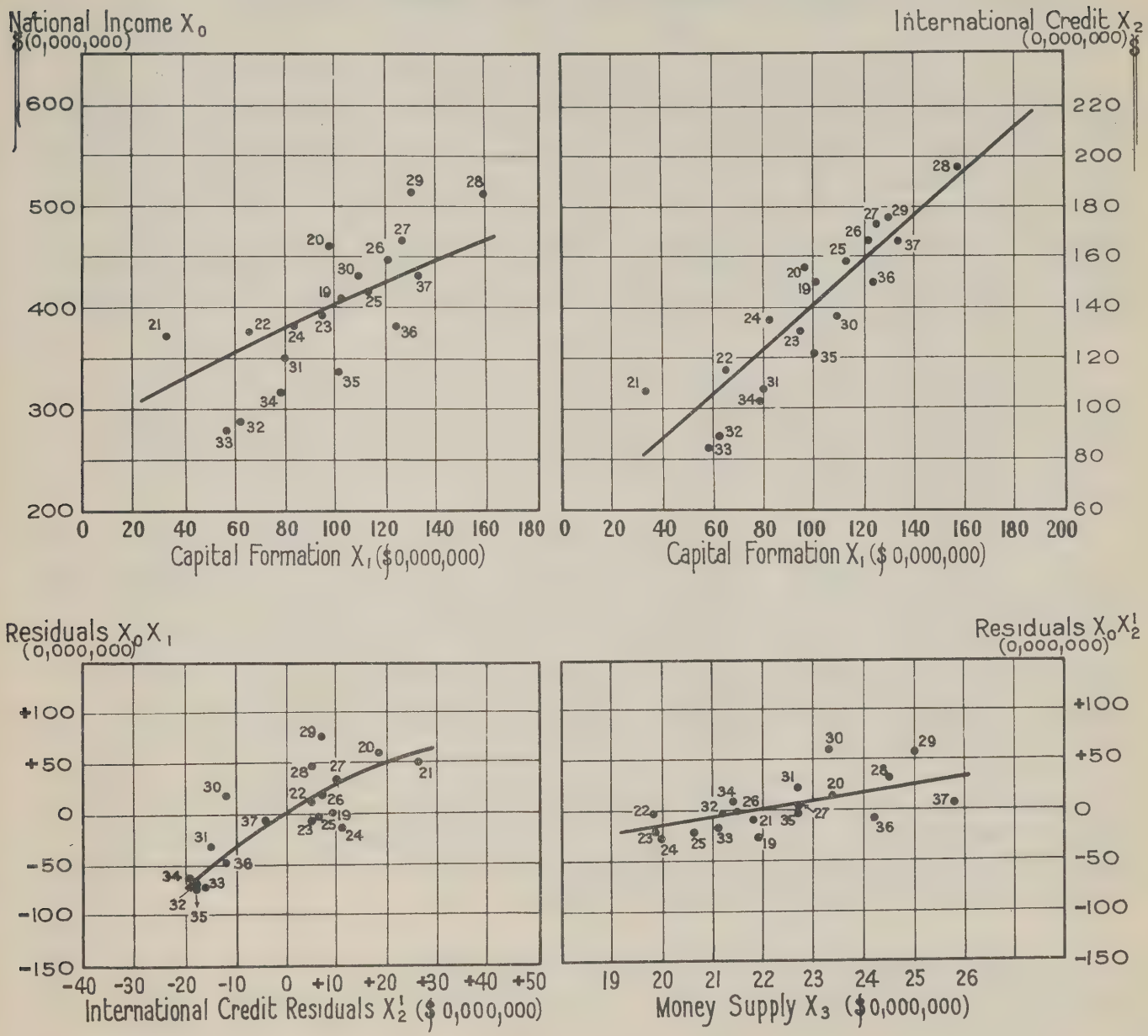
A certain part of the new income received by those obtaining immediate employment is, of course, placed in savings accounts or otherwise withheld from the purchasing of consumers' goods, and does not go directly to stimulate sales and increase income in other industries. The "secondary" increase in incomes and employment, therefore, depends upon the proportion of the initial increase in income which is not saved, but spent within a short time for "consumption" goods produced by those industries. The greater that proportion, the larger the multiplier, whether measured in terms of employment or of money incomes.

It remains to apply the multiplier analysis to the economy of a given country. Once the initial investment has been made, employment and income in other industries within the country will only be affected by that portion of the initial increase in income spent on home-produced goods. This portion of the expenditure only is used in estimating the multiplier for any single country.

From the viewpoint of a single country, also, increases in exports or decreases in imports are often taken as equivalent to a new investment in their effect on income and employment. They tend to cause a similar direct increase in available income and therefore are subject to the "multiplier" conception Statisticians like Dr. Clark, in verifying the changes in the national income of Australia, add the volume of public and private investment, the increases in exports and decreases in imports over a given period. The algebraic sum is then called the multiplicand, the multiplier being applied to find the changes in national income during the period.

NATIONAL INCOME OF CANADA, 1919-1938

MULTIPLE CORRELATION BETWEEN NATIONAL INCOME AND THREE OTHER FACTORS



Fitting Regressions to National Income

This Subsection on graphic multiple correlation of national income with other factors was prepared by A. D. Holmes, B.A. of the Agricultural Branch of the Bureau.

I. Basic Assumptions:- In correlating national income with the three independent variables (1) capital formation, (2) international credit and (3) money supply, certain basic assumptions are implied. First, it is assumed that there is a cause and effect relationship between national income and those three independent variables, the latter being the causes and the former their effect. Second, it is assumed that the cause and effect relationship is additive, i.e. the influence of any one independent variable on national income is not conditioned by the values of the other two variables. If these assumptions are not valid for the data at hand the resulting correlation analysis will fail to show anything but a chance inter-relationship.

It has been shown in the simple correlation presentation (pp 115 and 117) that each of the independent variables is highly correlated with national income. However, those correlations reveal only an inter-relationship unless it can be logically argued that the independent variables are causes and national income the effect.

II. An outline of the method follows:- The two assumptions above were considered to be true for the series of data under consideration, and it was desired to impose a multiple curvilinear correlation analysis on those series. The graphic method of multiple correlation was selected for this purpose because of its simplicity and its time-saving character. The method was introduced by L.H. Bean of the United States Department of Agriculture in two acticles published in the Journal of the American Statistical Association to which the reader is referred.[1/] The various degrees of intercorrelation are indicated by the coefficients of linear correlation for the following pairs of independent variables: capital formation with international credit, $r = +.93$; capital formation with money supply, $r = +.60$; and international credit with money supply, $r = +.66$. These coefficients were obtained after the elimination of the long-term trend from the original data.

III. Limitations of the method:- It was evident at the outset that the method was not strictly applicable to the series studied because of the existence of intercorrelation between the independent variables. This factor of intercorrelation prohibits any determination of a true cause and effect relationship because it prevents the isolation of the influences of the individual factors. In fact, it reduces the correlation analysis to the finding of a means of estimating national income from known values of the three independent variables. The so-called independent variables are, on the same grounds, not independent for purposes of this study.

For a more complete account of the limitations of this method of correlation the reader is referred to an appraisal by W. Malenbaum and J.D. Black appearing in the Quarterly Journal of Economics. [2/]

See references 1 and 2 on page 124.

TABLE 29. - NATIONAL INCOME AND OTHER ECONOMIC FACTORS, 1919-1938 - CYCLES.

Year	National Income	Estimate of Gross Formation of Capital	Construction Contracts Awarded	International Credits	Exports (ex.gold)	Imports of Merchandise	Money Supply	Outstanding Government Debt
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
1919	- 0.41	- 1.22	- 0.25	+ 0.13	+ 0.32	- 0.59	+ 0.56	+ 0.53
20	+ 0.50	- 0.62	+ 0.17	+ 0.37	+ 0.47	+ 1.30	+ 1.43	+ 0.05
21	- 0.86	- 0.70	- 0.02	- 1.23	- 1.34	- 1.00	+ 0.29	+ 0.53
22	- 0.76	+ 0.12	+ 0.63	- 0.93	- 1.09	- 1.05	- 1.02	+ 1.28
23	- 0.40	+ 0.03	+ 0.46	- 0.38	- 0.39	- 0.30	- 1.06	+ 0.93
24	- 0.48	- 0.24	+ 0.15	- 0.21	- 0.08	- 0.62	- 1.09	+ 0.81
25	+ 0.07	- 0.01	+ 0.25	+ 0.60	+ 0.98	- 0.14	- 0.81	- 0.44
26	+ 0.67	+ 0.67	+ 0.74	+ 0.86	+ 1.07	- 0.51	- 0.31	- 0.91
27	+ 1.03	+ 1.10	+ 1.02	+ 1.13	+ 0.99	+ 0.97	+ 0.38	- 1.51
28	+ 1.82	+ 1.60	+ 1.36	+ 1.91	+ 1.69	+ 1.69	+ 1.42	- 2.05
29	+ 1.90	+ 2.49	+ 2.05	+ 1.29	+ 0.99	+ 2.10	+ 1.60	- 2.02
30	+ 0.63	+ 1.58	+ 1.16	+ 0.03	- 0.20	+ 0.96	+ 0.43	- 0.95
31	- 0.64	+ 0.45	+ 0.12	- 0.90	- 1.34	- 0.63	+ 0.02	+ 0.02
32	- 1.54	- 1.03	- 1.22	- 1.50	- 1.67	- 1.31	- 1.04	+ 0.40
33	- 1.64	- 1.27	- 1.52	- 1.63	- 1.39	- 1.43	- 1.23	+ 0.60
34	- 0.98	- 0.98	- 1.36	- 0.97	- 0.73	- 0.81	- 1.13	+ 0.81
35	- 0.58	- 0.64	- 1.16	- 0.35	- 0.25	- 0.53	- 0.36	+ 1.16
36	+ 0.20	- 0.57	- 1.18	+ 0.61	+ 0.82	- 0.04	+ 0.51	+ 0.47
37	+ 1.09	- 0.01	- 0.79	+ 1.19	+ 1.20	+ 0.86	+ 1.44	+ 0.40
38	+ 1.00	- 0.26	- 1.10	+ 0.53	+ 0.60	+ 0.38	+ 1.50	

IV. Adjustment for intercorrelation:- The use of the method under the present conditions, where high intercorrelation exists, admittedly results in an arbitrary and indeterminate allocation of influence among the variables. However, if the basic assumptions in (I) are valid, it is possible to arrive at a means of estimating national income by the introduction of a device for eliminating and duplicating influence of intercorrelation. This device has been described and used by L.H. Bean in a mimeographed report of the United States Department of Agriculture.[3/] In the present instance it may perhaps best be explained with reference to its application to the problem under study.

The decision was arbitrarily made to consider capital formation as the most important causal factor affecting national income, and hence it appears in the analysis as the first independent variable, X_1. Since the second variable, international credit, is highly inter-correlated with capital formation, that effect on national income which will ostensibly be credited to capital formation will include also a portion of the effect of international credit. Hence to avoid duplicating the influence of the latter variable, that portion of its influence already measured indirectly through capital formation must be removed from further consideration. This was accomplished by replacing the original series of values of international credit by a new series of residual values. These residuals are the deviations of the original values from their inter-correlation regression with capital formation. Sketch 4 of Chart 38 shows the inter-correlation elimination. The residual values are shown in Table 30, Section A, Column 4.

The resulting residual series was employed to account for that variation in national income attributable to the original series which has not already been included through capital formation.

The correlation between capital formation and money supply was not considered significant enough to justify a similar adjustment for the latter variable.

V. Analysis:- When the above adjustment has been made, the problem reduces to that of the multiple correlation of a dependent variable, national income (X_0), and three so-called independent variables:

1. Capital Formation (X_1)
2. International Credit (X^1_2)
3. Money Supply (X_3)

These four series of values are shown in Table 30, Section A, Columns 1, 2, 4 and 6.

From this point the standard procedure for analysis as set out by L.H. Bean[1/] was followed. First approximations were drawn through the three scatter diagrams according to guide lines secured by joining observational points similarly influenced by all subsequent variables. Second approximations were then secured in the usual way. The regression and scatter diagrams are shown in sketches 1, 2 and 3 of Chart 38.

See references 1 and 3 on page 124.

TABLE 30. - ANALYSIS OF NATIONAL INCOME[x]

Section A. - Residuals from Regression Curves, 1919 - 1937.

Year	National Income	Capital Formation	Residuals	International Credit Residuals	Residuals	Money Supply	Residuals
	X_0	X_1	X_0X_1	$X_{\frac{1}{2}}$	$X_0X_{\frac{1}{2}}$	X_3	X_0X_3
1919	409	102	+ 1	+ 9	- 27	219	- 26
20	461	97	+ 60	+ 18	+ 12	234	-
21	373	33	+ 51	+ 26	- 10	218	- 9
22	376	66	+ 11	+ 5	- 5	198	+ 12
23	394	95	- 6	+ 5	- 22	199	- 6
24	385	84	-	+ 9	- 28	200	- 13
25	416	112	- 3	+ 6	- 22	206	- 11
26	449	121	+ 20	+ 7	- 1	215	+ 3
27	468	126	+ 34	+ 10	+ 4	227	- 2
28	514	158	+ 48	+ 5	+ 32	245	+ 12
29	515	130	+ 77	+ 7	+ 56	250	+ 32
30	433	109	+ 18	- 12	+ 59	233	+ 49
31	350	80	- 31	- 15	+ 22	227	+ 16
32	289	62	- 70	- 18	- 6	212	-
33	280	57	- 73	- 16	- 17	211	- 10
34	317	78	- 62	- 19	+ 7	214	+ 11
35	338	101	- 68	- 18	- 4	227	- 10
36	383	124	- 49	- 12	- 8	242	- 25
37	434	133	- 7	- 4	+ 7	258	- 23

Section B. - Estimates of National Income as Readings from Curves, 1919 - 1937.

Year	Capital Formation	International Credit Residuals	Money Supply Residuals	Estimated Value	Actual Value	Deviation of Estimate from Actual Value
	X_1	$X_{\frac{1}{2}}$	X_3			
1919	408	+ 28	- 1	435	409	+ 26
20	401	+ 48	+ 12	461	461	-
21	322	+ 61	- 1	382	373	+ 9
22	365	+ 16	- 17	364	376	- 12
23	400	+ 16	- 16	400	394	+ 6
24	385	+ 28	- 15	398	385	+ 13
25	419	+ 19	- 11	427	416	+ 11
26	429	+ 21	- 4	446	449	- 3
27	434	+ 30	+ 6	470	468	+ 2
28	466	+ 16	+ 20	502	514	- 12
29	438	+ 21	+ 24	483	515	- 32
30	415	- 41	+ 10	384	433	- 49
31	381	- 53	+ 6	334	350	- 16
32	359	- 64	- 6	289	289	-
33	353	- 56	- 7	290	280	+ 10
34	379	- 69	- 4	306	317	- 11
35	406	- 64	+ 6	348	338	+ 10
36	432	- 41	+ 17	408	383	+ 25
37	441	- 14	+ 30	457	434	+ 23

[x] All figures in tens of million dollars.

In Table 30, Section A. Columns 3, 5 and 7, are shown the residuals about the regressions of sketches 1, 2 and 3, respectively. In Column 7 appear the final unexplained residuals.

Columns 1, 2 and 3, in Section B of the same Table, show the readings from the three regressions in sketches 1, 2 and 3. Column 4 is the algebraic sum of the readings and represents the estimated values of national income. Deviations of the estimated from the actual values of national income are shown in Column 6.

VI. Summary:- The analysis in its final form represents only a means of estimating national income, and its validity is dependent upon the accuracy of the two assumptions listed in I. The individual regressions are not "net" regressions but "gross" regressions and do not indicate the relative importance of the assumed causal factors.

The standard error of estimate, adjusted for the number of degrees of freedom according to the method developed by M. Ezekiel 4/, is found to be $224,300,000. Expressed as a percentage of the average national income of $3,992,400,000 for the period 1919-37, the standard error becomes 5.6 per cent.

The index of correlation, similarly adjusted for degrees of freedom is .94. This compares favourably with the simple coefficients of correlation of the national income (after long-term trend elimination) with each of the three independent variables which are as follows -- with capital formation, + 91; with international credit, + .94, and with money supply, + .83.

However, the additional variation in national income accounted for by the multiple correlation analysis, in comparison with that accounted for by simple correlation, is so very small that the present analysis is not significantly more useful for estimating purposes than the original simple linear correlations. Various correlation coefficients between national income and a number of variables are shown in Table 28 on page 117.

References

1. L.H. Bean — "A Simplified Method of Graphic Curvilinear Correlation," Journ. Amer. Stat. Assoc., Vol. XXIV, Dec. 1929, pp. 386-397; and "Applications of a Simplified Method of Correlation to Problems in Acreage and Yield Variations," Vol. XXV, Dec. 1930, pp. 428-439.

2. W. Malenbaum and J.D. Black — "The Short-cut Graphic Method: An Illustration of 'Flexible' Multiple Correlation Techniques." Quart. Journ. of Econ. Vol. LII, Nov. 1937, pp. 66-112.

3. L.H. Bean — "Applications of a Simplified Method of Curvilinear Correlation," Mimeographed Report, Part I, of U.S. Dept. of Agric., Bureau of Agric. Ec. Sept. 1929.

4. M. Ezekiel — Methods of Correlation Analysis, 1930, Chap. 15, pp. 220-228.

Section 9.

Other Estimates of The National Income

It is undesirable to have many estimates of national income in circulation. Even if the estimates have distinguishing labels, few people understand the significance of the different descriptions. Some authorities argue that we need a variety of approaches and considerable variation in results. A great variety, however, leads to confusion. The object of the present report is to provide one clearly defined and clearly labelled estimate of national income for common use. Comparable estimates are provided annually for a period of years sufficient for making the required comparisons and the annual estimates will be maintained currently and extended to the latest possible date by means of monthly data. The monthly estimates are weighted according to annual results, and, though based on less comprehensive quantitative material, constitute a fairly accurate picture of current fluctuations pending the receipt of fuller information.

While the compilation may follow any one of several avenues of approach, a particular series of estimates has been singled out as representing the national income. The viewpoint emphasizes the productive, functional and geographic sources of income. There are good reasons for considering each of these sources in computing an estimate. Many purposes are served by extending the study to obtain a three-fold distribution by industrial and service groups, by the various types of payment such as salaries and wages, withdrawals of working proprietors, interest and dividends, and finally by geographical divisions.

Another requirement to be met is historical comparability. The inter-war years offer some advantages as a period of observation since two major economic cycles were completed during the period. The span is suitable for the compilation of "long-term" trends and measures of variability.

The preparation of an estimate of the national income with appropriate distributions according to productive sources, types of payment and regions is a legitimate function of a central statistical office such as the Dominion Bureau of Statistics. Establishing an authoritative annual estimate of national income simply described and explained to the public does not stand in the way of continuous research to improve basic elements in the estimates or to interpret or analyze the results.

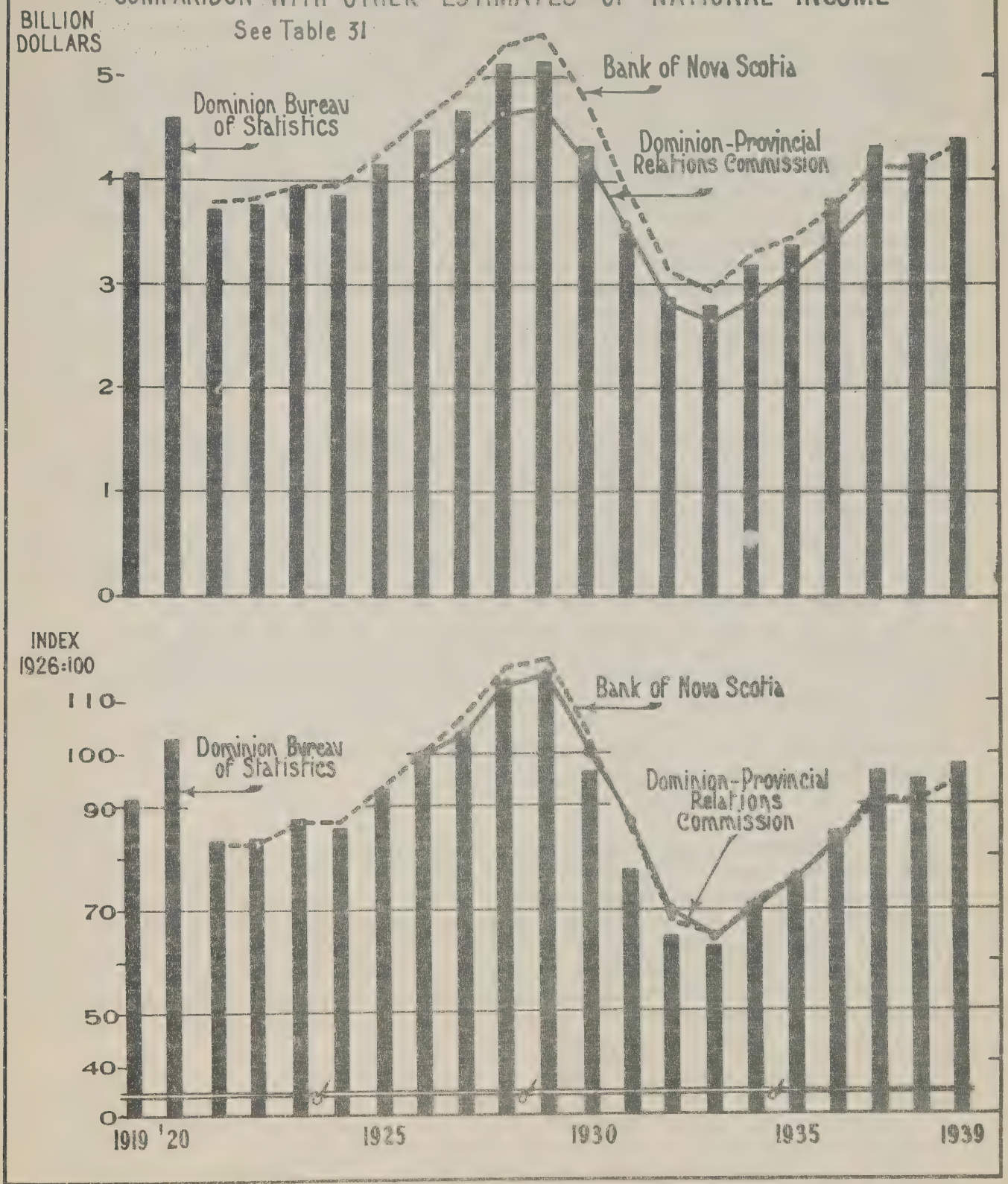
TABLE 31. - COMPARISON OF ESTIMATES OF NATIONAL INCOME OF CANADA, 1921-1939.

Year	Dominion Bureau of Statistics (a)		Bank of Nova Scotia (b)		Research Staff of the Royal Com. on Dom.-Prov. Relations (c)	
	Million Dollars	Index 1926=100	Million Dollars	Index 1926=100	Million Dollars	Index 1926=100
1919	4,087	91.0	-	-	-	-
20	4,614	102.7	-	-	-	-
21	3,735	83.1	3,789	83.0	-	-
22	3,762	83.7	3,809	83.5	-	-
23	3,945	87.8	3,979	87.2	-	-
24	3,854	85.8	3,975	87.1	-	-
25	4,161	92.6	4,273	93.6	-	-
26	4,494	100.0	4,564	100.0	4,081	100.0
27	4,682	104.2	4,894	107.2	4,246	104.0
28	5,138	114.3	5,308	116.3	4,641	113.7
29	5,149	114.6	5,429	119.0	4,719	115.6
30	4,326	96.3	4,771	104.5	4,168	102.1
31	3,498	77.8	3,860	84.6	3,525	86.4
32	2,893	64.4	3,109	68.1	2,862	70.1
33	2,795	62.2	2,942	64.5	2,632	64.5
34	3,171	70.6	3,278	71.8	2,879	70.5
35	3,381	75.2	3,464	75.9	3,117	76.4
36	3,829	85.2	3,759	82.4	3,417	83.7
37	4,342	96.6	4,162	91.2	3,829	93.8
38	4,246	94.5	4,132	90.5		
39	(e) 4,409	(e) 98.1	4,376	95.9		

(a) National Income 1919-1938, Dominion Bureau of Statistics; (b) Available National Income, Monthly Review of the Bank of Nova Scotia, May 1937 and September 1940; (c) Income Paid Out, Appendix 4, Table 1, National Income, a Study prepared for the Royal Commission on Dominion-Provincial Relations; (e) Estimated.

NATIONAL INCOME OF CANADA 1919-1939

COMPARISON WITH OTHER ESTIMATES OF NATIONAL INCOME



Estimates of the national income of Canada have been computed by the Dominion-Provincial Relations Commission and by the Bank of Nova Scotia. The work of the Research staff of the Commission was published in a final report as Appendix 4 entitled "National Income". The Commission's estimates were prepared for the purpose of showing the relative economic importance of the nine provinces. The general plan was to estimate income payments to individuals by provinces. Considerable income amounting to at least $75 million per year was omitted due to the difficulty of allocation by provinces. While considerable information was assembled regarding productive sources, the distribution by industrial and service groups was not completed. The Commission prepared the first comprehensive compilation of Canadian national income. New ground was broken in measuring the income from agriculture and the amount of bond interest and dividends received by individuals within the Dominion. One of the merits of the report was the thorough explanation of the method. The analysis of results was given in Appendix 3, "The Economic Background", but the discussion was limited mainly to the relation of the income of the provinces to public finance.

The compilation of the Bank of Nova Scotia was described in their Monthly Review, the last discussion on the subject having appeared in the number of September, 1940. The project consists of a compilation by industrial and service groups from 1921 to the present time. The results are presented under two headings, "national income produced", and "available national income". The latter represents the income which is at the disposal of Canadian individuals and corporations and differs from "income produced" by the deduction of payments of interest and dividends to external investors, by an allowance for depreciation estimated roughly at 7 per cent of the national income produced, and by the addition of receipts of interest and dividends from Canadian investments in other countries and the annual rental value of owned houses less estimated mortgage interest. The distribution is presented for eight industrial and service groups only, and no information is given as to types of payment or geographical distribution.

A comparison of the official estimates with the results of the Commission and the Bank is presented in Table 31 and Chart 39. The first section of the chart indicates that the estimate of the Commission was considerably below that of the Bureau in most years from 1926 to 1937. Provided that corporation negative savings had been taken into account, the Commission totals would have been considerably lower during the depression period. The estimates of the Bank were somewhat higher than the official figures during the period from 1921 to 1935, but have since occupied a lower position.

Section 10.

International Comparisons of National Incomes

The comparison of national income estimates for different countries admittedly bristles with difficulties. Definitions and methods are so varied that relationships must be quoted with caution. It is regrettable that no unanimity has been achieved as to the content of national income, definitions tending to centre around the production of goods and services and income payments to individuals. The definitions adopted in different countries reflect the nature or limitations of national statistics.

Commodity or industrial figures may be the cornerstone of the estimates. The occupational census and income tax compilations serve in other cases. Government departments usually adopt an eclectic viewpoint, making use of many classes of data which may have a bearing on the project in hand. Sometimes only one method or set of facts is available. Sometimes several are used and checked against each other.

Progress has been made since the subject was first broached at a statistical Congress held at The Hague about seventy years ago. However, the obvious difficulties have not been lessened by the conditions of economic depression and recurring world war in the last twenty-five years. The improvement in method is marked, but as an offsetting factor, problems have become more complicated and the demands for quantitative information more exacting.

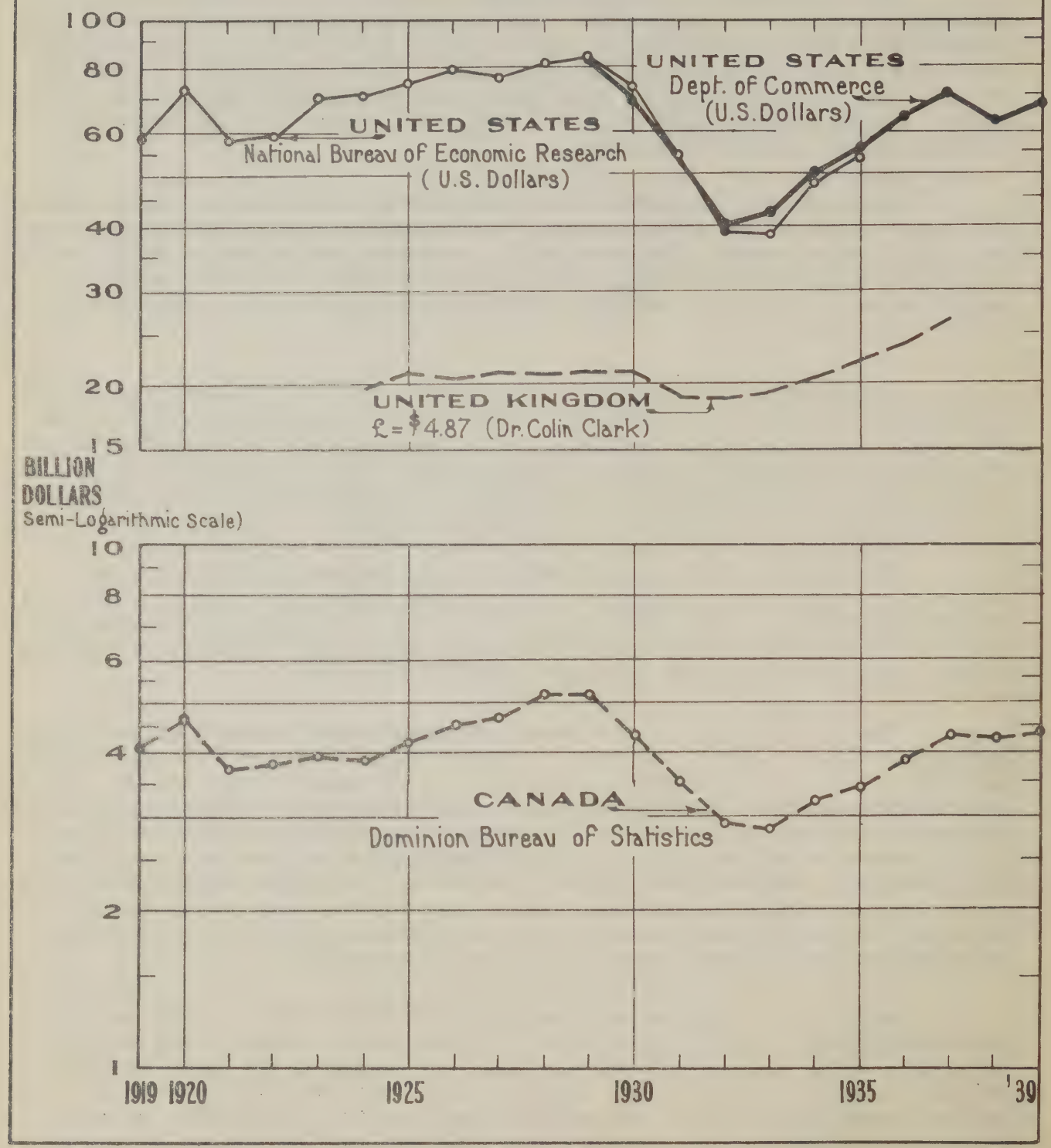
The purpose of the present section is to present the estimates for a number of countries in a uniform currency for the period from 1929 to 1937. The original estimates as compiled by recognized authorities of the several countries are expressed in Canadian dollars. The results are given in absolute amounts and in per capita form for ready comparison with Canadian totals.

The British estimates are based principally upon income tax assessments and statistics of salaries and wages collected by the Ministry of Labour for 1924 and 1928. The age and occupation section of the decennial census and the census of production for 1924 and 1930 were also used extensively. Undistributed profits and imputed rents of homes occupied by their owners were included in the data. Social insurance payments were entered in the compilation, but government old age, mothers' allowances, and war pensions, as well as income derived from public and private charity, were omitted. Income from external investments was an important element in the total. The estimates were compiled by Dr. Colin Clark and published in "National Income and Outlay", London, 1937.

Australian estimates were based on production statistics, the sum left after subtracting from the gross value of output in each industry the cost of materials, fuel, lighting and depreciation. The remainder was regarded as the sum available for the payment of income in the form of salaries and wages, interest payments, dividends and undistributed profits. The results prepared by Dr. Colin Clark and J.G. Crawford were published in "The National Income of Australia", Sydney and London, 1938.

NATIONAL INCOME OF CANADA 1919-1939

ESTIMATED NATIONAL INCOME OF UNITED STATES, UNITED KINGDOM AND CANADA



The methods used in making the estimates for the United States are so well known that only a brief outline is necessary. The main approach was to estimate, by main economic groups, the incomes received by individuals as well as the positive and negative savings of enterprises. The sum of the payments and savings was regarded as equivalent to the net value of goods and services produced. The expenditure side was investigated by a detailed study of the flow of commodities leading to general totals for capital formation and consumers' outlay. The computers were fortunate in having available a thorough analysis of income tax returns, and a considerable coverage by the annual census of production. The Department of Commerce has allocated income paid out by States and published a monthly compilation of income payments to individuals.

An indirect method was used in the preparation of the estimate for France. Statistics of salaries and wages were based upon rates as determined by annual surveys multiplied by the number in each occupation. The return on capital was derived from taxation data, residual income from main industrial groups and pensions and allowances were also included. The estimates were prepared by Leopold Duge de Bernonville and published in "Revue d'Economie Politique", Paris. May-June, 1937.

The estimate for Germany, as published in the Official Statistical Year Book, was based on data of income disbursed by productive groups. The imputed rentals of owned homes, and the undistributed profits of private companies were included. Adjustments were made for positive or negative savings of government agencies, but international transfers were apparently not considered.

Note on Source and Method of National Income Estimates for Ten Countries.

Country	Source	Note on Method
Austria	Austrian Institute for Business Research.	Derived from taxation data showing incomes received.
Bulgaria	A.Tchakaloff, State University of Sofia.	Compiled from census taxation and other government department reports.
Chile	Commerce Reports, No. 22, Bureau of Foreign and Domestic Commerce, Wash. May 28, 1938. p. 482.	An average of estimates obtained by five different methods.
Denmark	Danmark's Statistik, Statistik Aarbog, Copenhagen, 1930-8.	- - -
Estonia	Estonian Institute for Economic Research	- - -

TABLE 32. - NATIONAL INCOME OF CANADA AND OTHER COUNTRIES, IN MILLIONS OF [X] CANADIAN DOLLARS, 1929-1937.

Country	1929	1930	1931	1932	1933	1934	1935	1936	1937
AUSTRALIA	3,459	2,763	1,859	1,614	2,008	2,333	2,475	2,790	2,990
Austria	1,027	1,046	1,025	959	901	1,009	973	1,046	1,061
Bulgaria	409	352	331	320	389	440	476	-	-
CANADA	5,149	4,326	3,498	2,893	2,795	3,171	3,381	3,829	4,342
Chile	590	530	453	320	389	528	283	314	425
Denmark	994	1,006	924	727	736	857	890	933	-
Estonia	92	84	72	68	71	69	75	86	-
Finland	463	419	342	245	309	395	409	449	-
France	9,666	9,553	9,319	9,185	10,887	11,967	11,412	11,566	8,578
Germany	18,220	16,778	14,094	12,180	15,436	20,550	23,721	26,193	28,534
Hungary	1,003	893	788	763	881	1,005	1,138	1,243	-
Japan	5,536	5,179	5,093	3,264	3,198	3,539	3,601	3,807	-
NEW ZEALAND	-	-	-	325	348	392	442	550	-
Norway	591	589	519	395	444	490	513	577	-
Russia	5,824	6,359	9,996	10,330	10,548	11,050	13,207	16,635	19,140
Sweden	-	2,057	1,815	1,369	1,565	1,885	2,032	2,203	-
UNITED KINGDOM	19,173	18,822	16,157	13,349	15,973	18,616	19,697	21,533	23,672
UNITED STATES	83,511	69,011	56,379	45,492	46,140	49,849	56,156	65,224	71,172

[X] Converted from U.S. currency units on basis of Federal Reserve Board exchange rates; see Federal Reserve Bulletin, March 1939, page 236. United States, see Survey of Current Business, June 1940, Table 1, page 7. All other countries, see Conference Board Economic Record, August 3, 1939, Tables 4 and 8, pages 35 and 36.

Country	Source	Note on Method
Finland	Valter Lindberg. The National Income of Finland, Monthly Bulletin, Bank of Finland.	Value of commodities and services made available during the year for consumption or the accumulation of capital.
Hungary	Matthias Matolcsy and Stephen Varga. The National Income of Hungary, 1924/25 - 1936/37.	Totals include net income of industrial and service groups, imputed rentals or owned houses and net international transfers.
Japan	Mitsubishi Economic Research Bureau. Monthly Circular No. 162 April 1937, pp. 11-12. See also official publications.	Computed by productive sources, workers' earnings having been shown separately.
Norway	Det Statistiske Centralbyra Statistisk Arbok for Norge Oslo, 1938. p. 213, Table 239.	- - -
U.S.S.R.	U.S.S.R. Trade Delegation in Great Britain. "National Income" Monthly Review, Vol LX, No. 11. Birmingham Bureau of Research in National Economic Conditions. See also A Critique of Russian Statistics, 1939, by Dr. Colin Clark	The official statistics were based on the net value of production of the main industrial and service groups. Payments to other industries and allowances for amortization were deducted. Dr. Clark's method was to determine the quantities of goods and services produced and to express them at market values prevailing in Great Britain during a base year.

Estimates of the National Income of eighteen countries are presented in Table 32, and the relative position of the United Kingdom, United States and Canada are displayed in Chart 40. The estimates for the United States by the National Bureau of Economic Research and by the Department of Commerce are shown without any adjustment for variation in foreign exchange. The estimate for Great Britain is that shown on page 84 of "National Income and Outlay" by Dr. Colin Clark for the years from 1924 to 1933. Later years were extended according to the series published in the Conference Board Economic Record, page 46, Vol. 1, No. 4, August 3, 1939. The results for the whole period were then expressed in Canadian dollars at the par rate of exchange. Being plotted on a logarithmic scale, the percentage changes are shown as well as the absolute amounts. The fluctuations in the three countries were somewhat similar, the British curve recording an upward trend during the period of observation. The per capita national income of the countries is presented in Table 33, while the results for ten countries are portrayed in Chart 41. The estimates during the last few years for the United States, United Kingdom and Australia top the list, while Canada occupies an intermediate position.

NATIONAL INCOME OF CANADA, 1919-1938

PER CAPITA NATIONAL INCOME OF CANADA AND OTHER COUNTRIES IN CANADIAN DOLLARS, 1929-1937

See Table 33

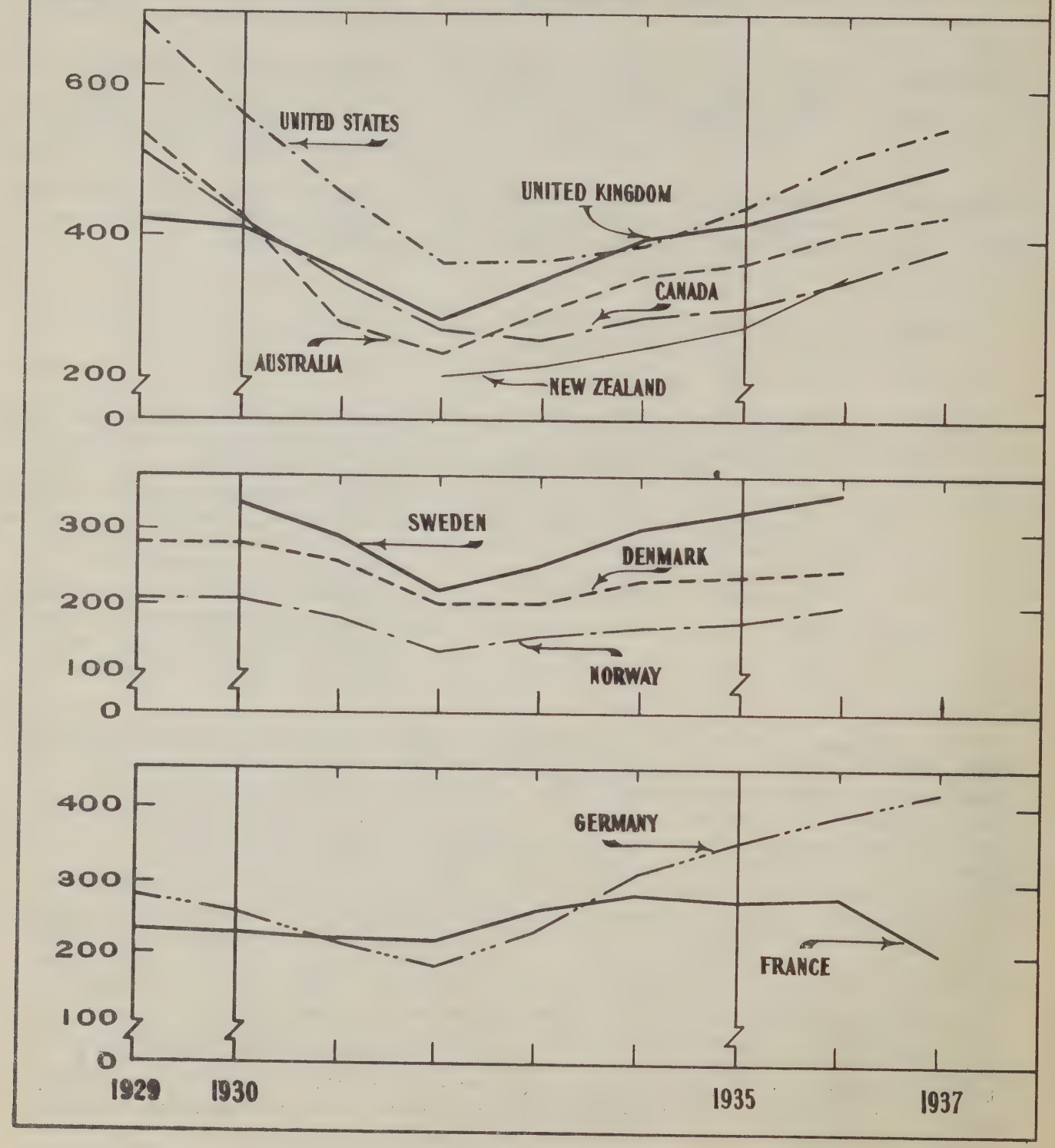


TABLE 33. - PER CAPITA NATIONAL INCOME OF CANADA AND OTHER COUNTRIES, IN [x] CANADIAN DOLLARS, 1929-1937.

Country	1929	1930	1931	1932	1933	1934	1935	1936	1937
AUSTRALIA	537	425	283	244	301	348	367	409	434
Austria	153	155	153	142	134	150	144	155	157
Bulgaria	71	59	55	53	64	72	77	-	-
CANADA	513	424	337	275	262	293	309	347	390
Chile	135	123	104	73	88	118	63	69	77
Denmark	283	282	258	201	202	234	240	249	-
Estonia	83	75	64	60	63	61	66	76	-
Finland	128	123	98	69	87	111	115	125	-
France	235	229	222	219	260	285	272	276	204
Germany	281	257	216	185	234	310	355	389	421
Hungary	116	103	90	87	100	119	128	138	-
Japan	88	80	78	49	48	51	52	54	-
NEW ZEALAND	-	-	-	212	226	252	283	349	-
Norway	210	210	185	140	156	171	179	200	-
Russia	46	50	78	79	79	82	96	120	136
Sweden	-	335	295	221	252	302	326	351	-
UNITED KINGDOM	420	411	351	288	344	399	420	457	500
UNITED STATES	687	561	454	364	367	394	440	508	551

[x] Converted from U.S. currency units on basis of Federal Reserve Board exchange rates; see Federal Reserve Bulletin, March 1939, page 236. United States, see Survey of Current Business, June 1940, Table 1, page 7, for national income and Statistical Abstract of the United States, 1939, No. 12, page 10 for population. All other countries, see Conference Board Economic Record, August 3, 1939, Tables 6 and 9, pages 35 and 36.

CHAPTER II

SCOPE OF ENQUIRY AND METHOD OF APPROACH

List of Sections

Section 1

Summary

The national income may be considered from several different viewpoints. Personal incomes, as is well known, are normally earned or produced from year to year, and received in the form of cash or its equivalent, and finally disbursed for living expenses or accumulated as a safeguard against the uncertainties of the future. Consequently, there are at least three angles of approach in arriving at individual income, and the same remark applies to national income.

Thus, the national total may be estimated in at least three ways. Briefly, these include an examination of the record (a) of the production of goods and services, (b) of the receipt of income by individuals either by direct payment or in the form of positive or negative savings, and (c) of consumers' outlay and formation of capital. The application of several different methods, if it were made possible by the availability of data, would permit verification of the national totals. In addition, supplementary information regarding the distribution of those totals would be a valuable by-product throwing light on the operations of the whole national economy. Unfortunately the lack of original data prevents the completion of such an ambitious programme. Each of the methods, however, can be adopted for a portion of the economic field. Information regarding the value of production and receipt of income by individuals is available in considerable abundance for the industrial groups covered by the annual census. In these circumstances, the application of both methods is of assistance in obtaining greater accuracy.

It is clear that the study of the nation's income resolves itself into at least three distinct but related divisions. The adoption of an operational definition places the emphasis upon one method and the related distribution. If the national income is defined as the output of goods and services the appropriate method would be to make an inventory of the product of such activities by industrial and service groups. A second definition implies the study of incomes received by individuals classified by types of payments, including positive or negative savings of enterprisers indirectly accruing to the credit of individuals. The money flowing to individuals as income is received as a return from work in the form of wages and salaries, as a return from investments in the form of interest, dividends and rents, or as entrepreneurial

withdrawals representing a return from work and investment in combination. A third definition may be based on the fact that the essential purpose of income is for the satisfaction of the recipient.. The investigation in this case is devoted to recording the flow of commodities and services to consumers at the price which the consumer pays and the net value of commodities going into the betterment of capital equipment. The appropriate distribution of the national total covers the different classes of expenditure (food, clothing, household utilities, etc.) and capital formation, such as buildings, machinery and rolling stock.

The second definition, based on income payments to individuals, presents many advantages and is consequently given a pre-eminent position in the present investigation regarding the amount and distribution of the Canadian national income.

General Considerations.

The national income may be defined as the algebraic sum of the income payments to individuals and the net savings, positive or negative, of the various economic enterprises of a nation. For practical purposes the payments of interest and dividends to "aggregates of individuals", including financial institutions such as banks and insurance companies, which manage the people's savings, are also included in the estimates.

An alternative definition is from the standpoint of production. National income arises mainly through the production of commodities and the rendering of services. Whether these operations are undertaken by the business enterprise or by the individual himself, personal incomes are for the most part derived from productive activity. The enterprise considered as a unit receives a gross revenue from operations and distributes the proceeds either to other concerns or to individuals in the conventional forms of salaries and wages, dividends, interest, withdrawals, pensions, and compensation to workmen for sickness and accidents. When depreciation and expenses paid to other industrial organizations are deducted from the gross revenue, the payments to individuals and savings of the concern, constituting the residue, are considered as the net contribution of the enterprise to the national income.

National income has also been defined as the total expenditures and savings of individuals. The amounts credited to individuals may either be devoted to the purchase of commodities and services for direct consumption, or to the formation of capital in preparation for productive expansion. Whether viewed as a return for the production of goods and services or as a means of obtaining personal utilities and expanding the capital equipment, the national income is essentially the sum of payments to individuals, and the computation of it must be directed toward the measurement of such payments.

The most direct means of obtaining the total national income would be by census enumeration, but it is doubtful whether complete information could be obtained in this way. The receipt of salaries and wages by employees in Canada is available for the census years 1910-11, 1920-21, and 1930-31, but the census questionnaire excludes other types of individual income, such as dividends, interest, rent and withdrawals of employers and persons working on own account.

Information regarding income is obtained annually from the income tax returns received by the Department of National Revenue. The partial coverage and the lack of detailed distribution, however, prevents the extensive use of such material for the present purpose.

An interesting experiment in the direct method of approach was the income census of Australia taken in 1915. The enumerator enquired as to the personal income, if any, of each individual residing in the country. It is now considered that the returns had a downward bias, and the method has obvious disadvantages stated as follows in the official report; "In view of (i) the emergency nature of the War Census, (ii) the evidence of incompleteness furnished by the returns, and (iii) the tendency for persons furnishing returns to suspect taxation, and hence to furnish a conservative estimate, it is probable that the War Census total is an underestimate of the position."

It is indeed no easy matter even for an individual to compute in terms of money, the total amount of his annual income. Doubtful items would include the imputed rent of his owned house, the money value of the goods and services produced and consumed on his premises and of the services ordinarily bought and sold but rendered free of charge within the family circle. The rural population is more resourceful than the urban in producing commodities (notably food and fuel) for family consumption, thus adding considerably to the family income. The imputed rent of the owned home in the city is an important item, ordinarily overlooked in this connection. The difficulty in expressing the total income of an individual is infinitely multiplied in the preparation of an estimate of the national income.

Section 2

Types of Payment

Productive effort is the main source of the income of individuals. We find from the decennial census of 1931, that nearly two-fifths of the Canadian people were gainfully occupied. In other words, there were nearly four million people who earned money or its equivalent, by assisting in the production of marketable goods or services.

Salaries and Wages.

Out of the four million gainfully occupied persons in Canada at the time of the last census, more than two and a half million received payment in the form of salaries and wages in return for their co-operation in productive operations.

It is also reported that more than one-third of a million persons were working during the year in question without receiving any regular remuneration in the form of salaries or wages. As many of the "no pays" were farmers' sons working at home, the income of at least a part of the group consisted of a living allowance paid principally in the form of food, clothing and housing. Apprentices in other industrial groups, while receiving no money wages, sometimes obtain appreciable compensation in commodities and services. Payments in kind are of considerable variety, including farm rents, food, board and lodging of farm labourers, domestic servants and other employees. As there is not the customary freedom of disposal, some restriction is implied in the nature of such income.

Other Labour Income.

Compensation is provided in eight of the nine provinces for injuries suffered by employees while engaged in industrial occupations. Funds are accumulated by contributions from the firms, classified into industrial groups according to occupational hazards.

Pensions are regarded as a credit item in the national income account. If a pension is paid to a retired worker out of company funds it should be added to the record. Similarly pensions in respect of war services, old age pensions, mothers' allowances, pensions to the blind and similar payments fall under this heading.

Relief payments may be divided into two categories, employment relief and direct relief. Employment relief was either provided by the federal and various provincial governments on wholly owned government enterprises or shared by federal, provincial and municipal governments on a percentage basis varying according to the nature of the work performed. A considerable proportion of employment relief was directly carried out by outside agencies, particularly the construction industry, through transfer payments from the different authorities at varying rates of percentage contributions.

Work relief represents payments for services currently performed by individuals. The practice has been to distribute these amounts on the basis of estimates of salaries and wages, classified according to the contributors including the Dominion and provincial and municipal governments. Ultimate payments to individuals are made to a large extent through the construction industry.

Direct relief payments are disbursements to individuals that are not necessarily related to services currently performed by them. These payments after allowance for general expenses have also been distributed according to origin in the various government agencies.

Withdrawals by Working Proprietors.

In addition more than one million persons participated in productive enterprise as employers or by working on their own account. It is evident, that, for the most part, working proprietors, group by group, will normally earn a larger per capita return than the employees. The earnings for the services rendered by this important class are known as enterprisers' withdrawals.

Dividends.

Dividends paid by Canadian corporations contribute greatly to the income of individuals. For example, gross declarations amounted to about $400 million in 1930, but only a portion of the sum was received by individuals living in Canada. A considerable part was paid to other companies and an even larger sum to shareholders living abroad. On the other hand, dividends earned and paid by external companies were received in considerable amount by Canadian shareholders. The amount of net dividends paid by Canadian companies is determined from the annual compilation of the Income Tax Branch and the examination of a large sample of company accounts.

The estimated dividends paid by each industrial group represent the net dividends originating therein. Data are not available giving the proportion of dividends paid by each industrial group which flow to individuals and the proportion flowing to other industries. To determine the amount of dividends originating in each industry, it was thus necessary to deduct dividends received from dividends paid, the sum of the results representing total dividends paid to individuals or aggregates of individuals.

The amount of the net dividends compiled in this way is equivalent to the payments to individuals in Canada and to shareholders abroad. It only remains to debit the portion going abroad and credit the payments of external companies made directly to individuals in Canada.

Bond and Mortgage Interest.

A similar procedure is followed in computing the amount of bond interest received by individuals. Bond interest received by insurance companies and other aggregates of individuals, is disregarded when computing the net interest paid by such financial institutions. This departure from regular procedure is offset by disregarding the short-term interest paid by banks and trust companies to individuals on account of funds on deposit and return on capital equity from insurance companies. An adjustment for interest payments going abroad and for interest received by individuals from external sources is necessary. Unfortunately it is not possible to allocate exactly these payments by industrial groups and the adjustment is mainly restricted to national totals.

Interest payments on mortgages are chiefly paid to three main groups making loans on real estate:- (a) various government agencies, (b) financial corporations such as insurance, mortgage, trust, land banking and railway corporations and (c) individuals.

It is possible to estimate the amount of mortgage interest paid to individuals by utilizing the decennial census and the annual reports of the federal and various provincial governments and the financial statements of insurance, mortgage, trust, bank and railway companies. Interest on mortgages held by individuals is divided into liens on farms and on non-farm property. The latter covers business and industrial property as well as residential, the total being segregated under the industrial group of real estate.

Net Rentals.

Net rentals, whether for residential or business property, are an important form of return on investment. Offsetting expenses such as taxes, interest on mortgages, fire insurance, repairs, depreciation, and costs incidental to the ownership of property are deducted and allowances have been made for vacancies and non-collection of rents on rented properties to obtain the net return. An estimate of imputed rent for owner-occupied houses is also included. While a house is a consumption good, the occupation of it involves an addition to the income of the owner-occupant. The net imputed rental is estimated on the basis of actual rents paid for houses of similar type and location.

Positive and Negative Savings.

An important source of income is the amount which accrues to the credit of individuals through their interest in industrial and financial corporations. Gains effected by industrial companies in prosperous years, though payment may be deferred, add to the equity of the shareholder. The income of shareholders is reduced in less favourable times when a decline is recorded in the net assets of business enterprises as a result of the current year's operations.

Section 3

Excluded Items

The scope of the present study may be further clarified by comment on a number of items which are excluded, partly owing to the lack of primary data necessary for making reasonably accurate estimates.

(1) No attempt has been made to calculate the value of housewives' services, although the aggregate utility contributed by them in the home is doubtless substantial. Such activities, however, are inspired very largely by non-economic motives and form much more a part of life in general than of economic activity proper.

(2) Other uncompensated services of members of families, such as repairing of property, furnace-tending, snow-shovelling, washing and repairing of cars and similar functions performed within and about the home, are not reported in the estimates.

(3) The lack of data regarding income from odd jobs is also the only reason for exclusion. These comprise such activities as canvassing by independent sales agents, street sales of newspapers and magazines, the mowing of lawns, tending furnaces and shovelling snow for a money remuneration.

(4) The amount of illegal income arising from gambling, sweepstakes, bootlegging, smuggling and the like, is carefully concealed by the recipients and consequently cannot be computed.

(5) With the exception of house rentals, no account is taken of the return arising from the use of owned durable goods. Besides the difficulty of estimating the hypothetical rent of automobiles, furniture and similar goods used by the owner, there is involved the problem of differentiating between economic and non-economic activities. All types of short-term interest except that paid on mortgages are excluded from the general estimate.

As explained above, banks and insurance companies for certain purposes are regarded as aggregates of individuals, and revenues in the form of dividends and bond interest are not deducted when computing the net revenue from these sources. As an offsetting item no account is taken of the short-term interest paid by banks to depositors, nor of the income accruing to individual policy-holders through the operations of the insurance companies in excess of the basic requirements of policies. It would be even more difficult to compute the amount of other short-term interest received by individuals. Similarly no account is taken of the changes in the value of assets or property held.

(6) Profits or losses from the sale of assets or property largely due to changes in prices are regarded as pertaining to the capital rather than the curren account of individuals. They result from the capitalization of present or future changes in net income which are independently shown in the general estimate. The inclusion of the gains or losses arising from the change of ownership would amount to duplication. However, profits or losses derived from the sale of assets by professional dealers are included, since they presumably represent the value of the marketing services rendered by these individuals.

(7) The changes in value of commodity inventories are excluded, this treatment being carried out aside from the effect on industrial profits or losses as reported in the annual statements of companies. The data of changes in surplus are compiled by calendar years for public interest companies as an indication of the trend of positive or negative savings of business enterprises. Information regarding inventory changes is not fully reported for most industries in profit and loss statements. In another connection change in inventory is computed for a number of large industrial groups as an element in capital formation.

(8) Business enterprise distributes to employees a considerable amount in addition to salaries and wages. These payments include selling costs such as expense accounts of commercial travellers and agents, bonuses and similar supplementary income. Other examples are pensions paid informally and commissions aside from the insurance group, where an estimate has been made of the receipts of agents under this heading.

(9) Another class of payments to individuals for which adequate information is not available includes amounts received from unorganized charity and similar gifts. Bad debts are final transfers from the creditor to the debtor. Inheritances are regarded merely as transfers from the estate of the deceased person to the beneficiaries. Such payments affect the distribution or location of income, rather than alter the amount of it from the national standpoint.

A definite statement of the content of the national income as here computed is presented above as a further measure of guarding against misconception. Discussion is also given of the excluded items. As the primary purpose of the study is to determine the purchasing power acquired by or accruing to individuals, there is a presumption in favour of including all such items as affect the amount of personal incomes. The main reason for exclusion is that certain classes of payments to individuals cannot be computed owing to lack of adequate data. Other elements in the national income are derived from non-economic activities or are components in the statement of wealth or capital rather than of income.

Section 4.

General Method of Computation

As a clue to the best method of measuring the national income, it is obvious that most payments to individuals are due to personal or capital services. Such remuneration is paid by business enterprises to individuals for their contribution to economic activity. The remuneration for capital services is regarded as extended to include not only current payments but savings treated as shares of the value of current production of commodities and services, retained by enterprises

for the benefit of shareholders. The sum of such income and personal earnings, constitutes by far the greater part of the national income as visualized here. Arguments have been presented for and against the inclusion of receipts by individuals not representing a return for services rendered. These include non-contributory pensions and direct relief as paid either by business enterprise or by government. In recent years such one-sided payments have bulked large in the Canadian economy, contributing appreciably to purchasing power. While recognizing that authorities have not yet reached unanimity on this point, it has been decided, following the method of Kuznets, to include the sum of the payments in the general estimate. This decision is justified by the definition adopted at the inception of the study. As payments to individuals may not be compiled directly, owing to the paucity of the data, an indirect method must be formulated. In the production of commodities and services by business enterprises, personal services and capital are furnished by individuals and "aggregates of individuals". The term "aggregates of individuals" includes organizations such as banks and life insurance companies which are considered as associations of individuals organized to manage their collective savings. In return for their services, the business enterprises pay out income to the individuals and aggregates of individuals in the form of wages, salaries, withdrawals, dividends, interest and rents, etc.

(a) A considerable part of the activities of the Dominion Bureau of Statistics has for years been devoted to obtaining information regarding the annual operations of economic groups. An annual census is maintained of the operations of the eight main industrial groups producing commodities. The reports include the gross production, cost of materials, fuel and electricity and fixed capital. From the latter item may be computed a reasonable amount for depreciation. From 1919 to 1921, the amount of miscellaneous expenses was also collected for some important groups. By deducting from gross revenue, the above-mentioned payments to other industrial groups and making an allowance for depreciation, we obtain the national income derived from the group.

(b) A further step is the allotment of that total among the different claimants. Information regarding salaries and wages is readily available for most groups. The number of enterprisers is reported by the decennial census and the remuneration for their services is estimated by use of wage data and other pertinent material. The number of enterprisers in inter-censal years is estimated from the number of plants or establishments wherever available. Dividends and interest are computed from information furnished by the Income Tax Branch of the National Revenue Department and through the examination of a large sample of corporate accounts. Other payments to individuals include compensation for injuries, interest on mortgages, etc. The sum of the above-mentioned payments to individuals will differ from the national income by the positive or negative savings of enterprises. While the residual item is retained by the enterprise, it is evident that it affects the income of the shareholder or other participant. The enterpriser working on his own account or as a member of an unincorporated firm may appropriate the profit immediately or, by ploughing back profits, enhance the net worth of the enterprise. In any case the residual positive or negative savings accrue to individuals. The estimate of withdrawals is restricted in this study to a fair remuneration for services performed, including the contribution of the enterpriser to the management of the concern.

The research work in this connection included an analysis of thirty industrial groups. In many of these the gross revenue was known and it was

possible to improvise a profit and loss statement for each of the years during the period of observation. Briefly, the plan was to regard payments to other industries and depreciation as a debit and payments to individuals either in current form or in accruals as credit in the national-income account. The sum of the debits and credits, with adjustment for positive or negative savings, is equivalent to the gross revenue, providing an excellent verification of the distribution.

The gross revenue and payments to other industrial groups are unavailable for a considerable part of the economic field. The procedure in such cases was to compile the payments to individuals including positive or negative business savings. The absence of information as to other phases of group accounts was a disadvantage, but alternative methods of verification have been adopted wherever possible.

Company profit and loss accounts seldom furnish sufficient information for the compilation of the contribution to the national income. They are normally arranged in such form as to avoid the disclosure of the cost of operations. Even if a complete set of profit and loss accounts of all business enterprises as usually prepared were assembled, a number of items essential to a national-income study would be lacking. Nevertheless, by drawing on the data available from manifold sources, it is possible to obtain results within a reasonable margin of error.

Section 5.

Outline of Sources

The main source of income data is obviously the reports of the Dominion Bureau of Statistics. The annual censuses of agriculture, fishing, mining, manufactures, electric power, construction and related primary industries are a treasure-house for the research worker along this line. The construction census was re-established in 1934, having been discontinued thirteen years previously. During the interval, considerable information may be obtained from MacLean's Building Reports, giving construction contracts awarded by months and year for each of the provinces as well as the Dominion.

The gross and net value of production, summarizing the results for nine main branches, is published in the Annual Survey of Production. In branch reports as originally published, a considerable amount of duplication is shown between the gross operating revenues of the manufacturing group and the various primary industries. The lumber and pulp and paper industries are included with forestry and smelting and a number of non-metallic mineral industries with mining. Owing to the many changes in method and content in recent years a revision of the totals originally published in the Survey of Production was necessary for the period of observation. The deduction from Dominion and Provincial totals of the cost of fuel and purchased electricity by industrial groups and the elimination of duplication by reducing the manufactures total was a heavy task. The use of totals for manufactures n.e.s. rather than for the total group causes a difficulty in establishing the relative contribution of the different industrial groups, but this treatment is regarded as the best solution under the circumstances. The term "manufactures n.e.s." signifies the residue of the value added by manufacturing operations after deducting industries closely connected with primary groups, including fish-curing, sawmilling, pulp and paper, smelting and certain mineral industries.

Annual operating reports for railway and public utilities are published by the Bureau, but the water and road transport groups require special research. The Income Tax Branch of the National Revenue Department furnishes excellent material regarding dividends and interest. The Dominion-Provincial Relations Commission compiled the distribution of dividend payments by provinces for the years 1926-1937, making use of income tax files. The examination of many company accounts listed in the Annual Financial Review and the Corporate Securities Year Book of the MacLean Publishing Company, assisted in the distribution of industrial groups. The international flow of dividends and bond interest was furnished by the Internal Trade Branch from the study on the Balance of International Payments. Banking totals were made up by the use of the averages of the monthly reports published in the Canada Year Book and the study of corporation reports. Data as to salaries and wages were furnished by the Canadian Bankers' Association. The reports of the Department of Insurance were the main source of the estimates on the Insurance group, but a special enquiry was made by the Life Insurance Association as to the division of Canadian and external disbursements. The Government contribution was mainly compiled from the Public Accounts of the Dominion and Provinces, with examination of samples for the principal cities and rural municipalities. A special questionnaire was sent to the provincial governments regarding the amount of work and direct relief and the distribution of governmental contributions.

The payments derived from wholesale and retail trade were obtained mainly from the reports of the census of merchandising and service establishments. The monthly employment enquiry was of assistance in the computation for the years preceding 1930. The service census collected for one year only (1930) was the principal basis of the estimates for custom and repair and various forms of recreational, business and personal service. Data collected by the manufactures census from 1919 to 1921 was valuable in establishing relationships between the operating accounts in the different service groups.

Income produced through educational institutions was compiled by the Education Statistics Branch of the Bureau of Statistics and assistance was obtained from the census of institutions regarding the income of the medical group.

The decennial census of 1931, with its thorough analysis of agriculture, population, occupations and employment, proved invaluable as a source of information unavailable elsewhere. The census of agriculture furnishes comprehensive data regarding the value and disposal of farm products and the cash expenditures of the farmer. The numbers and status of gainfully occupied were presented in Volume VII of the census of 1931, while the salaries and wages paid to employees, distributed by industrial groups, are reported in Volume V. As the information is given by provinces, the census compilations are an excellent guide to the geographical distribution.

An appendix to the report of the Commission on Dominion-Provincial Relations is devoted to a study of the National Income of Canada 1926-37. A considerable staff was engaged in this project for nearly two years and extensive detail prepared, which will undoubtedly prove very useful to investigators in the field. The principal objective of the Commission study was to obtain a suitable figure of national income by provinces to which could be related the revenues and expenditures of the provincial and municipal authorities, in short to measure the potential tax-paying ability of the residents.

Section 6.

Alternative Methods of Computation

The fundamental concept of the national income is that it consists of the sum of individual incomes. Such incomes are mainly paid to individuals in view of their participation in economic activities and may be considered under several headings such as productive and distributive functions, saving and expenditure. Economic activity is a continuous process, but may be examined from different standpoints.

(a) Productive method:- Commodities are produced and services rendered by business enterprises classed as individuals, partnerships or companies. The gross operating revenues from the sale of the product are divided for the present purpose into (1) payments to other industrial groups and depreciation allowances and (2) payments to individuals, including accruals in the form of positive or negative savings. The items under the former include the cost of raw materials for fabrication or resale, general expenses for services of transportation, advertising, banking, government and other producing units and depreciation allowances for the value of capital equipment consumed in the process of production.

Deducting the sum of these expenses from the gross revenue, it is evident that the residue is the amount available for distribution to individuals including accruals in the form of positive or negative savings of enterprises. This method is quite generally used in computing the national income originating in agriculture. Failing adequate data for other methods, the agricultural totals were made up in this way by Colin Clark in "National Income and Outlay" pages 73 to 78, as a component in the estimate of the national income of Great Britain. The method was also used by the United States Department of Commerce and the Commission on Dominion-Provincial Relations. Owing to the comprehensive data available through annual census reports in Canada the method has been applied in the present study to a considerable number of other economic groups. The ultimate objective is to extend the application of the method to the whole economic field, making at appropriate places such adjustments and amendments as may be necessary to arrive at the desired total of aggregate income payments to individuals. The resulting total should correspond closely to the national income or "income produced" published for the United States by Dr. Simon Kuznets in "National Income and Capital Formation". For the purpose of this report, the procedure outlined under (a) is named 'the productive method".

(b) The industrial framework is also the starting point for the explanation of the distributive method. Business enterprises distribute to individuals in one form or another, the remainder of the gross revenue after providing for depreciation and operating expenses paid to other organizations. Individuals cooperate in supplying labour and capital for the production of commodities and services. The claimants are remunerated for their participation by the payment of salaries and wages and other labour compensation, the withdrawals of owners for their services, dividends, interest and net rents. If a business gain accrues during a given period and is ploughed back into the enterprise, the retention adds to the equity of the shareholders. A loss on the year's operations would have the contrary effect of reducing the accrued income. The sum of these payments should be equivalent to the total obtained by the production

method (a). For the industrial groups on which sufficient data are available for the application of both methods, an excellent form of verification is provided. The distributive method (b) is the most popular in Britain and America in preparing estimates of national income. Except for agriculture the production method is practically disregarded by the research workers on national income in those countries. The conventional method is to make a summation of payments to individuals whether distributed by industrial groups as by the Department of Commerce in the United States, or mainly in bulk as by Dr. Colin Clark in his latest book, "National Income and Outlay".

The sum of payments to individuals by economic enterprises for productive activities with no adjustment for business gains or losses is named "income paid out". This total differs from the national income by the extent of accruals in the form of positive or negative savings of enterprises, but is valuable for some purposes. One of these is the geographical distribution, where the breaking up of positive or negative savings of enterprises according to the location of the claimants presents a difficult problem.

Detailed income tax data contribute greatly to the estimates of national income prepared by method (b) in Great Britain and the United States. The compilation of the tax returns in the latter, presents information by industrial groups as to payments to individuals in the form of salaries and wages and dividends, etc. Even business gains and losses are known from this source and the national income may be obtained by adjusting the payments to individuals for the positive or negative savings. The income tax returns of Canada, however, have not yet been used to any appreciable extent in making up the industrial totals, as the industrial classification used by the Income Tax Branch does not conform to that of the Bureau. Even in other countries it is found that while income tax material is of valuable assistance, many other sources must be requisitioned to complete the picture. The distribution method has been applied in the present study to each of the economic groups and on the whole this approach appears the most suitable for the computation of national income. In view of the availability of basic data, no other procedure can compare under present circumstances with the distributive method. Our object is to obtain the sum of individual incomes and it seems that the cardinal method must be to examine the records of the different economic groups from which that income is derived. While method (b) is on the whole superior to other procedures, it must not be overlooked that basic data for most of the groups are far from adequate, and other methods must be used for verification. The application of alternative methods will also furnish supplementary information of great value in interpreting economic operations.

(c) A third method is the summation of the expenditures and savings of individuals. Surveys of urban family expenditures have recently been collected in the United States and Canada. The project in the United States was under the direction of the National Resources Committee with other governmental agencies co-operating. Data were collected for 300,000 families and a further study was projected. With such a large body of records available it may be possible to construct a picture of the disbursement of income in the United States. Returns were received from a sample of 1,800 families in Canada during the later months of 1938. While furnishing valuable information regarding problems of nutrition and for the weighting of cost of living indexes, the sample is regarded as too selective and consequently unsatisfactory for the determination of the total expenditure and savings of Canadian families.

(d) The fourth method has greater promise. It consists of a study of commodities and services made available for consumption and for the expansion of capital. The primary purpose of income is to provide utilities for the bread-winner and his dependents. This may be accomplished directly by the purchase of goods and services or indirectly by an expansion in capital equipment. The assumption behind this appraoch is that income is used up by the purchase of consumption goods and the formation of capital. The method is to classify goods and services into consumers' goods and producers' goods and to trace the flow from primary production or from importation, with adjustment for exports, until the goods or services are acquired by the ultimate consumer. The value of the goods and services computed as the end-product should approximately equal the national income.

The only thorough application of this method was made by the National Bureau of Economic Research under the direction of Dr. Kuznets. The results are outlined in "National Income and Capital Formation", and in greater detail in "Commodity Flow and Capital Formation" published in 1938.

A variation of this method was used in computing the national income of Sweden from 1861 to 1930 by the Institute for Social Sciences of the University of Stockholm. It was stated (page 16 of Part I) that, "disregarding the complications introduced by foreign trade, the total income in a given period will equal the sum total of consumption and net investment. The consumption group will include all services and non-durable commodities produced in the period that are ready for consumption, i.e., capable of satisfying without further processing human wants, to which must be added any consumption from existing stocks, while any increase of stocks must be deducted. The investment group comprises the balance of the net product i.e., all items in excess of consumption and consequently involving a corresponding increase in the stocks of goods, whether consumers' or producers' goods." The following indicates the adjustment for external trade. "If exports are larger or smaller than imports, the total income of the country must be reduced by the export surplus or increased by the import surplus in order to represent the sum total of consumption and investment."

In addition to furnishing a device of verification, method (d) makes available valuable information not provided by the other procedures. The relative fluctuation of consumers' outlay and capital formation in different years is particularly useful in the interpretation of current economic movements. In recent years capital formation has been projected into the limelight in theoretical discussion and a statistical background is needed to place the controversy on a realistic basis. Research has solved many problems and it may be that these results will be of assistance in understanding the economic cycle and reducing the evils of extreme fluctuations in evidence for the last two hundred years.

(e) Finally, the population of the country may be considered as an economic unit and all the net incomes of individuals added up. The total income accruing to the inhabitants in a closed community, must be equal to the total income derived from the agents of internal production. In a community of this nature the result will thus be the same whether we add together in a given period all the individual incomes or the exchange value of all the productive contributions. The only difference is that another method of

estimating the national income is being used. The calculation now proceeds from the receivers of income, while previously it originated at the source. Provided income tax returns were filed by those receiving income below exemption limits as well as by those above those limits, information would be available for estimating the national income according to this plan. The principle on which the individual incomes are estimated must be the same as that used when the productive contributions were calculated. The total should be modified in respect of any differences between the income concept adopted for taxation purposes and that on which the estimate of the productive contribution is based. Adjustments may include: additions for payments in kind, for example, the food products consumed by the farm family, capital gains and losses which should be eliminated and positive or negative savings of enterprises accruing to shareholders which should be included.

Method (e) presents a bird's eye view of national income by summing up the various types of payment for the population as a whole. From this viewpoint definite information is lacking on some of the streams of income flowing to individuals even in census years. Consequently the method should only be used for verification of results obtained by methods (a), (b) and (d) which involve detailed estimates by production and commodity groups.

The five methods outlined above by no means exhaust the possible procedures for estimating the national income. Estimates may be prepared for a variety of purposes and in consequence differ somewhat in content. A measure of the total output of the entire economy will differ from a measure of the total national consumption or the total current payments to individuals. The objective adopted here is to estimate the sum of the payments and savings of enterprises which are credited to resident individuals from year to year. In obtaining this income, it is advisable to make use of as many procedures as may contribute to the aim in view. While dependence has been placed mainly on the productive (a) and distributive (b) methods, it is proposed to explore as time permits the expenditure (c) and consumption (d) and other procedures. We propose, however to reserve the name "national income" for the most inclusive concept as defined above. Other variants may be computed for particular uses, but the main purpose of employing alternative methods is to verify the general result.